PSSA, Grade 4 Math

Cans of Food

Handscoring

Anchor Set

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

   A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

   B. How many cans did each of the 8 students bring?

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

number of boxes: _____

number of cans in each box: _____

Grade 4 Math
Cans of Food

Assessment Anchor this item will be reported under:
  M04.B-O.1 Use the four operations with whole numbers to solve problems.
Specific Anchor Descriptor addressed by this item:
  M04.B-O.1.1 Use numbers and symbols to model the concepts of expressions and equations.

Scoring Guide:

Score	In this item, the student –
4	Demonstrates a thorough understanding of using numbers, symbols, and the four operations to solve problems by correctly solving problems and clearly explaining procedures.
3	Demonstrates a general understanding of using numbers, symbols, and the four operations to solve problems by correctly solving problems and clearly explaining procedures with only minor errors or omissions.
2	Demonstrates a partial understanding of using numbers, symbols, and the four operations to solve problems by correctly performing a significant portion of the required task.
1	Demonstrates minimal understanding of using numbers, symbols, and the four operations to solve problems.
0	The response has no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures as required by the task. Response may show only information copied from the question.
Non-scorables	B – Blank, entirely erased or written refusal to respond F – Foreign Language K – Off-task U – Unreadable

Top Scoring Student Response And Training Notes:

Score	Description
4	Student earns 4 points.
3	Student earns 3.0 – 3.5 points.
2	Student earns 2.0 – 2.5 points.
1	Student earns 0.5 - 1.5 points. OR Student demonstrates minimal understanding of using numbers, symbols, and the four operations to solve problems.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

A.

What?	Why?
$8 \times c = 192$ **OR** $c \times 8 = 192$	

(1 score point)

      1 point for correct answer

B.

What?	Why?
24 (cans)	

(1 score point)

      1 point for correct answer

C.

What?	Why?
Answers may vary. Accept any combination whose product is 250: 1 and 250 2 and 125 5 and 50 10 and 25 **Sample Responses:** number of boxes: 10 number of cans in each box: 25 **OR** number of boxes: 25 number of cans in each box: 10	**Sample Explanation:** Since there were 253 cans of food and only 3 cans remaining, the students packed 253 – 3 = 250 cans into the boxes. There could be more than one correct response because the correct response is any two numbers that multiply to get 250. I chose 10 and 25 since 10 × 25 = 250. I could also have chosen 5 and 50 since 5 × 50 = 250.

(2 score points)

      1 point for correct answer

      1 point for correct and complete support

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$192 \div C = 8$$

B. How many cans did each of the 8 students bring?

24 cans

---

4   A. 1 point – correct answer.

B. 1 point – correct answer.

C. 2 points – correct answer and complete explanation (explains that there are multiple factors of 250). Note that *both* the number of boxes and the number of cans in each box must be correct to get credit for the answer.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

First, I took the remainder of 3 off of 253 to get 250. Since this ended in a zero, I knew it was divisible by 2, 5, or 10. You could have chosen one of those numbers for your number of boxes, or you could have chosen one of those numbers for your number of cans. There are 6 different possibilities. That is why there could be more than one correct response.

number of boxes: ___10 boxes___

number of cans in each box: ___25 cans___

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$C \times 8 = 192$$

B. How many cans did each of the 8 students bring?

Answer:

24 cans

$$10 \times 8 = 80$$
$$10 \times 8 = 80 \to 160$$
$$4 \times 8 = 32 - 32 \to 192$$

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3   A. 1 point – correct answer.

B. 1 point – correct answer. Note that support is not required and is not assessed.

C. 1 point – correct answer only; the explanation is insufficient for credit (an additional example does not explain *why there could be more than one response*).

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

253 - 3 = 250 $250 \div 10 = 25$, I know there are other possible solutions for this because $250 \div 50 = 5$.

number of boxes: ___25___

number of cans in each box: ___10___

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192$$

B. How many cans did each of the 8 students bring?

24 cans

3   A. 1 point – correct answer.
     B. 1 point – correct answer.
     C. 1 point – correct answer, incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There can be more than 1 response because there could be 2 boxes with 130 cans in it with 3 left over.

number of boxes: _____

number of cans in each box: 250

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76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

8 students who brought in cans

x C number of cans each student brought

192 cans brought in all

B. How many cans did each of the 8 students bring?

192 cans brought in all

÷ 8 students who brought in cans

24 cans per student.

Each student brought 24 cans.

2
   A. 1 point – correct answer (vertical equation is acceptable).
   B. 1 point – correct answer.
   C. 0 points – incorrect answer and incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be more then one correct response because there is a remainder. You could have the cans differently because there is a remainder.

number of boxes: _____85_____

number of cans in each box: _____4_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8\overline{)192}\ \ cans$$

(2 4)

$$\begin{array}{r} 2\,4 \\ 8\overline{)192}\ \ cans \\ \underline{-16\downarrow} \\ 0\,32 \\ \underline{-\ \ 32} \\ 0\,0\,0 \end{array}$$

B. How many cans did each of the 8 students bring?

I think that each student brought 24 cans because I divided it. I did 192 ÷ 8 and got 24. So then I knew that each student brought 24 cans to the food drive, So thats why I think im correct.

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2 A. 0 points – incorrect answer (no variable).

B. 1 point – correct answer.

C. 1 point – correct answer, insufficient explanation for any credit (removing 3 cans from 250 and/or "50 × 5 to get 250 R3" does not explain *why there could be more than one response*).

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

This can be more then one correct answer because it says they put some cans into boxes. Also it says there were 3 cans left. So you can divide 253 cans into any number you want with 3 left over. My answer was 50x5 to get 250 R3.

$$50 \overline{)253} \quad \begin{array}{c} 5 \\ 250 \\ \hline 003 \end{array}$$

number of boxes: _50 boxes_

number of cans in each box: _5 cans_

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div 8 = ?$$

B. How many cans did each of the 8 students bring?

Each student brought 24 cans, because I did 192 ÷ 8 on my calculator.

2   A. 0 points – incorrect answer. Note that using "?" or another symbol for the variable is OK but *the variable can't be on one side of the equation by itself*).
   B. 1 point – correct answer.
   C. 1 point – correct answer, incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There can be another answer
because you can have 3, or 4
boxes instead of 2. Then put an
equal emount of cans in each
boxes and still have 3 cans left.

number of boxes: _____2_____

number of cans in each box: _____125_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div 8 = c$$

B. How many cans did each of the 8 students bring?   24 cans of food

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2   A. 0 points – incorrect answer (variable on one side by itself).

B. 1 point – correct answer.

C. 1 point – correct answer, incorrect explanation (explains *what* this student did but not *why* there could be more than one response).

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There is a different way to figure this out. I did division, but someone else could've done multiplication. If someone else did use multiplication, this could've been how they did it. First, you round 253 to the nearest 10, and you get 250. If you take off the zero, you have 25. Next, if you really know your extended multiplication facts, you'd know that is 10 × 25 = 250, by using that taking off the zeros strategy. And then, you're not at 253 yet. There's your notice remainder 3! This might seem confusing but if you think hard about it, it's simple!

number of boxes: __10__

number of cans in each box: __25__

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76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

students · cans   total

$$8 \times C = 192$$

variable

$$C = \; ?$$

B. How many cans did each of the 8 students bring?

Each student brought 24 cans.

$$C = 24$$

$$8 \times 24 = 192$$

2 A. 1 point – correct answer.
   B. 1 point – correct answer.
   C. 0 points – incorrect answer and incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be more than one correct response because there are three left over. It is prime.

number of boxes: 256

number of cans in each box: 8

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \times (c) = 192$$

B. How many cans did each of the 8 students bring?

$$8 \times 24 = 192 \checkmark$$

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2 A. 1 point – correct answer.
   B. 1 point – correct answer (embedded in the equation).
   C. 0 points – incorrect answer and incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

I divided 3 and 253 andgot 11 but it says there 3 left so the answer must be 12!

number of boxes: 12

number of cans in each box: 84

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \overline{)192}^{\,24}$$

B. How many cans did each of the 8 students bring?

24 cans

---

1   A. 0 points – incorrect answer (no variable).
       B. 1 point – correct answer.
       C. 0 points – incorrect answer and incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

50 boxes
10 cans each box

It did not say how many boxes there was so 10 cans in each 50 boxes can be just 1 way to respond.

number of boxes: _____ 50 _____

number of cans in each box: _____ 10 _____

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76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$c \div 192 = 8$$

B. How many cans did each of the 8 students bring?

24 cans

1   A. 0 points – incorrect answer (backwards).
     B. 1 point – correct answer.
     C. 0 points – incorrect answer (in explanation) and incorrect explanation.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could of bean 85 Boxes and 17 foods th each box. Because if you get more the would be a remainder of three.

number of boxes: _____

number of cans in each box: _____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div 8 = c$$

B. How many cans did each of the 8 students bring?

10 cans

0 A. 0 points – incorrect answer (variable on one side by itself).
 B. 0 points – incorrect answer.
 C. 0 points – incorrect answer and no explanation.

76.   *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C.   Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

number of boxes: _____64_____

number of cans in each box: _____11_____

PSSA, Grade 4 Math

Cans of Food

Handscoring
Training Set 1

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

Chloe was having a garage sale. She had 8 boxes. She also had 192 toys. How many toys will She put in each box?

B. How many cans did each of the 8 students bring?

① 24

8 | 192 cans

8↓.

Answer: 24 cans each Student brought in

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

① $5\overline{)253}$ = 50 R3   253 cans in all   boxes

② $10\overline{)253}$ = 25 R3   boxes

③ $25\overline{)253}$ = 10 R3   boxes

④ $50\overline{)253}$ = 5 R3   boxes

There could be more than 1 correct response. There could be more than 1 correct response because if you take the 3 away from 253 you would have 250. Then you could divide a bunch of numbers into 250, like 5, 25, 10, and 50. We can do that because 250 ends in a zero and 5, 25, 10, and 50 all go into numbers that end in zero. So there could be 4 correct answers to this equasion.

number of boxes: _____ 10 _____

number of cans in each box: _____ 25 _____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$142 \div 8 = 2\cancel{4}$$

B. How many cans did each of the 8 students bring?

24 cans

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76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

$$24\overline{)2\overset{10}{53}}$$

number of boxes: 24

number of cans in each box: 10

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76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

> **A.** Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.
>
> $$2\overline{)8}^{\,4}$$

> **B.** How many cans did each of the 8 students bring?
>
> Each of the 8 students brought 4 cans,

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

The class put 250 cans of food in boxes.

number of boxes: _____4 boxes_____

number of cans in each box: _____65 cans_____

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div 8 = ?$$

B. How many cans did each of the 8 students bring?

Each student brang 24 cans each.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

A possible value could be 5 boxes and 50 cans in each box. because 50 x 5 = 250 + the 3 cans remaining = 253. There could be more options because if you do 253 - 3 (the 3's is the leftovers) it equals 250. Plus 250 has many different factors and 5 and 50 are 2 of them.

number of boxes: _____5_____

number of cans in each box: _____50_____

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \times C = 192$$
$$192 \div 8 = C$$
$$C = 24$$

B. How many cans did each of the 8 students bring?

8 students brought 24 cans of food each.

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76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

boxes	cans
125	2
2	125
5	50
50	5

Because there are many factors for number 250.

number of boxes: ___5 boxes___

number of cans in each box: ___50 cans___

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192$$

B. How many cans did each of the 8 students bring?

Each student brought in 24 cans.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There is more than one correct response. The reason is 253 is never divided into the correct answer for this question.

number of boxes: 84

number of cans in each box: 3

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

I got 24 cans that the students brought in, this is how I got it I divided 192 to 8 and got 24.

B. How many cans did each of the 8 students bring?

I got 32 cans by adding 24 to 8 and got 32.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be more than 1 correct response, but I got 21 boxes and 221 cans in each box.

number of boxes: _____21_____

number of cans in each box: _____221_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div 8 = 24$$

B. How many cans did each of the 8 students bring?

24 cans of food

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76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There are two ways the class can fill the boxes with 253 cans and have 3 can remaining. One way is You can fill 10 boxes with 25 cans in each or 25 boxes with 10 cans in each. Those are two ways to fill the boxes with 3 cans left.

number of boxes: ___10/25___

number of cans in each box: ___25/10___

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$192 \div 8 = x$$

cans in all   students

B. How many cans did each of the 8 students bring?

24 cans per student

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

$$253 \div X = N\, R\, 3$$

cans of food   boxes cans per box   cans remaining

There can be more than one answer because if you subtract the three cans remaining, and get 250 cans of food, 250 can divide into multiple factors. That is how I know that I am correct for why there can be more than one correct response.

number of boxes: 5

number of cans in each box: 50

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76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$\frac{\begin{array}{r} C \\ \times 8 \end{array}}{192 \, cans}$$

B. How many cans did each of the 8 students bring?

they brought 24 cans in

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76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

$$253 \div$$

33 mall

$$253 \div 3$$

33 mall

number of boxes: __12,6,5__

number of cans in each box: __33__

Subject: Math   Item: Cans of Food   Grade: 4

Name _____

Number	Score	Notes
T1-1		
T1-2		
T1-3		
T1-4		
T1-5		
T1-6		
T1-7		
T1-8		
T1-9		
T1-10		

PSSA, Grade 4 Math

Cans of Food

Handscoring
Training Set 2

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192$$

B. How many cans did each of the 8 students bring?

24 cans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be more than one correct response because 250 (look below for my explanation of how I got 250) has more than 2 factors that go into it. It is a composite number.

How I got 250: Well if there was 253 cans of food and 3 didn't fit in a box, you would just drop the three.

number of boxes: _____25_____

number of cans in each box: _____10_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8\overline{)192}$$

B. How many cans did each of the 8 students bring?

24 ccans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

$$x \frac{\begin{array}{r} 50 \\ 5 \end{array}}{250} R3$$

you could do 50 x 5 = for a

answer or you could 51 x5 iF

you wanted to count the

food remaining?

number of boxes: _____50_____

number of cans in each box: _____5_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

each kid brought 24 cans because

8x24=192

B. How many cans did each of the 8 students bring?

24

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be 5 boxes filled with 50 cans because 5×50=250 and they had 3 cans left over.

There could be more than 1 response because you could switch it around like this. 50 boxes filled with 5 cans.

number of boxes: _____5_____

number of cans in each box: _____50_____

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 + c = 192$$

B. How many cans did each of the 8 students bring?

184 cans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.
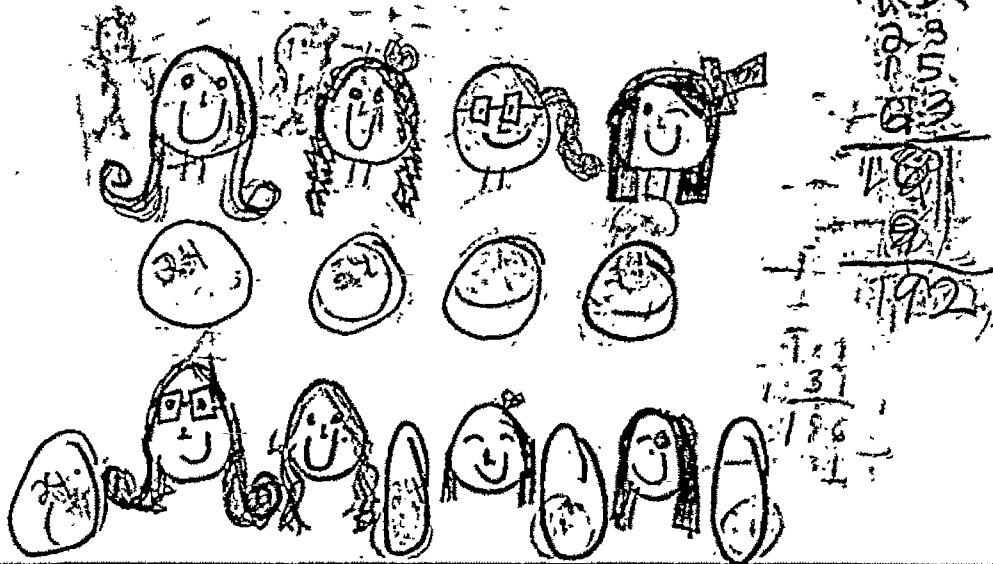
The number of boxes
is 2 but there
could be 3 becouse
you could put 50
can's in 1 box and
100 in one outher
100 in the last box
and there you go.

number of boxes: _____2_____

number of cans in each box: _____250_____

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

B. How many cans did each of the 8 students bring?

91 cans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

number of boxes: 5 boxes

number of cans in each box: 50 cans

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div c = 8$$

B. How many cans did each of the 8 students bring?

24 cans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

there could be 1 cans in 253 of the boxes.

There could be many diferent responses because you can varie the number of boxes and cons in each box hundreds of times so there could be many ways of how many cans could be grouped between the many numbers of boxes.

number of boxes: _____253_____

number of cans in each box: ___1 Can___

---

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$192 \div 8 = ?$$

B. How many cans did each of the 8 students bring?

$$8 \overline{)192}$$

24
-16 ↓
32
-32
0

Each of the 8 students brought 24 cans in for the food drive

---

76. **Continued.** Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There can be more than one correct response because two hundred and fifty three minus three is two hundred and fifty. Two hundred and fifty can be divided by many numbers. For example two, five, ten. So it could there can be more than one correct response.

number of boxes: ___5___

number of cans in each box: ___50___

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192$$

$$\begin{array}{r} 8 \\ \times \ 2 \\ \hline 192 \end{array}$$

B. How many cans did each of the 8 students bring?

Each of the eight students brought 24 cans.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

In this paragraph, I will tell you why there could be more than one correct responses. There are two correct response, mine being one of them. The second one is 125 boxes and 2 cans in each. This is a correct answer because it's basically mine flip-flopped. Hence, I have told you why there could be more than one correct response.

number of boxes: _____2_____

number of cans in each box: ___125___

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$C = 192 \div 8$$
$$C = 24$$

B. How many cans did each of the 8 students bring?

$$C = 24 \text{ cans}$$

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There were 5 in each box. There could be
Several answers because it depends on what you
divide by. I divide by five which means there are
5 in each of 50 boxes.

number of boxes: _____ 50 _____

number of cans in each box: _____ 5 _____

---

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$192 \div C = 8$$

B. How many cans did each of the 8 students bring?

24 cans

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There could be more than 1 response because if there were three cans left, there would be 250 to divide. 250 has more than 2 factors, so there can be more than 1 response.

number of boxes: _____10_____

number of cans in each box: ___25_____

Subject: Math   Item: Cans of Food   Grade: 4

Name   _____

Number	Score	Notes
T2-1		
T2-2		
T2-3		
T2-4		
T2-5		
T2-6		
T2-7		
T2-8		
T2-9		
T2-10		

PSSA, Grade 4 Math

Cans of Food

Handscoring
Practice Set[*]

*Responses in this set do not have true scores. Apply scores based on scoring criteria.

26. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \times c = 192$$

B. How many cans did each of the 8 students bring?

24 Cans

---

26. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

The problem says there were 3 cans left over, so I did 253 - 3 = 250.

250 can be divided by 10 so that is the number of boxes. 250 ÷ 10 = 25. There can be more than one correct response because 250 has many factors and if you divide 250 by any factor it will be the number of boxes and the answer will be the number of cans in each box.

number of boxes: __10 boxes__

number of cans in each box: __25 cans__

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$
\begin{array}{r}
0\ 24 \\
8\overline{)192} \\
-16 \\
\hline
32 \\
-32 \\
\hline
0
\end{array}
$$

B. How many cans did each of the 8 students bring?

Each eight students brought 24 cans.

---

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

This is how there could be more than 1 answer. Since it didn't say how many cans were in the box, you could have as many as you want in one box. The number of the cans still had to be even. Depending on how many cans you have, it has to go in evenly in the boxes. Also, you had to make it (number of cans) evenly while still 3 remaining. This is how there could be more than 1 answer.

number of boxes: 2 boxes

number of cans in each box: 125 cans

26. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192 \text{ cans}$$


B. How many cans did each of the 8 students bring?

24 cans

$$c = 24$$

---

26. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.
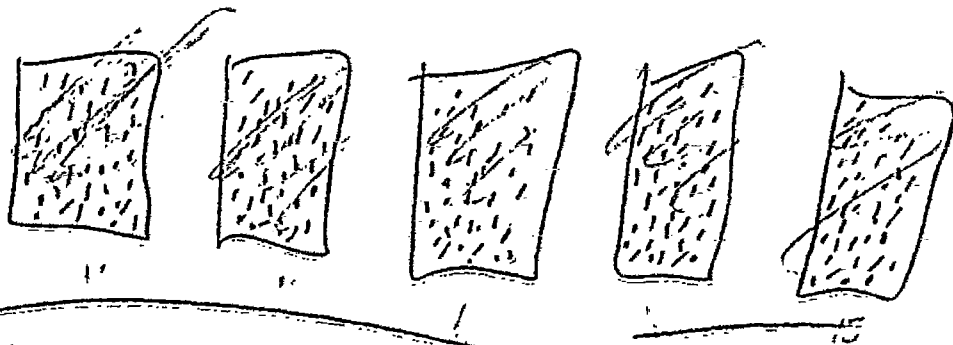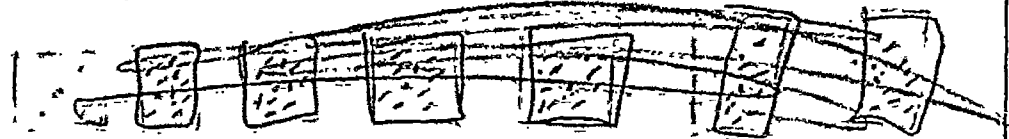
There could be more than one correct response. One response could be 5 boxes and 50 cans in each or 50 boxes and 5 cans in each because it would still be 253 cans in all with 3 left over. Another response could be 6 boxes with 50 in each and three in the last box.

number of boxes: _____5_____

number of cans in each box: _____50_____

26. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

192

c

24 cans

B. How many cans did each of the 8 students bring?

24

8

3cans

26. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

The way I got my was that there are 24 cans and so the number of cans can be 24 cans in each box and 24÷8=3 so it would be 3 boxes

number of boxes: __3 boxes__

number of cans in each box: __24 cans__

---

26. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$8 \times c = 192$$

B. How many cans did each of the 8 students bring?

24 cans

26. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

If there are 253 cans, you need to subtract 253 and 3 and get 250 because of the 3 cans remaining. 250 has more than 1 factor. Its factors besides 1 are 10 and 25, and 5 and 50. So, there could be more than 1 correct answer.

number of boxes: ___5___

number of cans in each box: ___50___

76. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \div 192 = c$$
$$c = 24 \text{ cans each}$$

$$\begin{array}{r} 2\,4 \text{ cans} \\ 8\overline{)192} \\ 16\!\downarrow \\ \hline 32 \\ 32 \\ \hline 0 \end{array}$$

B. How many cans did each of the 8 students bring?

Each stundent brought 24 cans to the food drive.

$$\begin{array}{r} 24 \\ 8\overline{)192} \\ 16\!\downarrow \\ \hline 32 \\ 32 \\ \hline 0 \end{array}$$

---

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

24 cans
87 boxes

$$3\overline{)253}$$ with work showing 84, 24, 13, 1

84 + 3 = 87

24 + 3 = 27

Three could be more correct responses because you could have bone it in your head, on paper or a caclural too.
Another correct response is a mulptly, add, sudrctack and divider correctly too.
Those are two other correct responses too.

number of boxes: ___87 boxes___

number of cans in each box: ___27 canss___

26. Each of 8 students brought c cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \times n = 192$$

B. How many cans did each of the 8 students bring?

each student brought in 24 cans.

---

26. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response. There could be 50 boxes of 5 cans. But there are many responses because like with my anwser for example you switch the number of boxes with the number of cans. So there could be 5 boxes full of 50 cans in each. With three still left over. So there are many anwsers because you can flip each one arond.

number of boxes: 50

number of cans in each box: 5

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (c) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$x24\ cans\ each$$

$$8\overline{)192}$$
$$\underline{-8\downarrow}$$
$$19$$
$$\underline{-16\downarrow}$$
$$32$$
$$\underline{-32}$$
$$0$$

B. How many cans did each of the 8 students bring?

Each student brought in 24 cans each.

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

There can be more than one because you can divide, multiply, or subtract.

number of boxes: 84

number of cans in each box: 3

76. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may **not** be on one side of the equation by itself.

$$8 \times c = 192$$

$$c = \_\_$$

B. How many cans did each of the 8 students bring?

Each student brought 24 cans each $c = 24$

---

76. *Continued.* Please refer to the previous page for task explanation.

The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.

C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

The class could have 5 boxes with 50 cans in each

$$50 \times 5 = 250$$

You would have 3 cans left over

number of boxes: _____5_____

number of cans in each box: _____50_____

26. Each of 8 students brought *c* cans of food for a food drive. They brought a total of 192 cans.

A. Write an equation that can be used to find the number of cans (*c*) each of the 8 students brought. The variable in the equation may not be on one side of the equation by itself.

$$192 \div (c \times 1) = ?$$

B. How many cans did each of the 8 students bring?

24 cans

---

26. *Continued.* Please refer to the previous page for task explanation.

> The entire class brought a total of 253 cans of food. They put some cans into boxes. The class put the same number of cans into each box. There were only 3 cans of food remaining.
>
> C. Write a possible value for the number of boxes the class filled and the number of cans that were put into each box. Explain why there could be more than one correct response.

$$253 - 3 = 250$$

Factors	product
25 × 10	250
10 × 25	250
50 × 5	250
5 × 50	250

number of boxes: __25__

number of cans in each box: __10__

Practice Set*

Subject: **Math**   Item: **Cans of Food**   Grade 4

Name _____

Number	Score	Consensus	Annotation
P-1			
P-2			
P-3			
P-4			
P-5			
P-6			
P-7			
P-8			
P-9			
P-10			

*Responses in this set do not have true scores. Apply scores based on scoring criteria.

PSSA, Grade 4 Math

Cans of Food

Handscoring
Training Sets 1 and 2
True Scores/Annotations

Page	Score	Description
1	3	A. 0 points – incorrect answer. B. 1 point – correct answer. C. 2 points – correct answer and complete explanation (explains there are multiple factors of 250).
2	1	A. 0 points – incorrect answer (no variable). B. 1 point – correct answer. C. 0 points – incorrect answer and incorrect explanation.
3	0	A. 0 points – incorrect answer. B. 0 points – incorrect answer. C. 0 points – incorrect answer and incorrect explanation (removing the 3 remaining cans is insufficient for any credit).
4	3	A. 0 points – incorrect answer (using "?" for the variable is OK, but it can't be on one side of the equation by itself). B. 1 point – correct answer. C. 2 points – correct answer and complete explanation (explains that there are multiple factors of 250).
5	4	A. 1 point – correct answer. Consider that the student went on to *solve* the equation as seen with "192 ÷ 8 = c" and "c = 24". "8 × c = 192" is the answer. B. 1 point – correct answer. C. 2 points – correct answer and complete explanation ("many factors for the number 250" is sufficient, with or without the table).
6	2	A. 1 point – correct answer. B. 1 point – correct answer. C. 0 points – incorrect answer and incorrect explanation.
7	0	A. 0 points – incorrect answer. B. 0 points – incorrect answer. Note that if part B were *blank*, credit would be given for "24" found in part A. C. 0 points – incorrect answer and incorrect explanation.
8	2	A. 0 points – incorrect answer (no variable). B. 1 point – correct answer. C. 1 point – correct answer(s), the explanation is insufficient for any credit (another example only, lacking explanation of *why*. See SG-2). Note that if multiple answers are given, *all* must be correct for credit.
9	3	A. 0 points – incorrect answer (variable other than c is OK, but can't be on one side of the equation by itself). B. 1 point – correct answer. C. 2 points – correct answer and complete explanation.
10	2	A. 1 point – correct answer (vertical formula). B. 1 point – correct answer. C. 0 points – incorrect answer and incorrect explanation.

Page	Score	Description
1	4	A. 1 point – correct answer. B. 1 point – correct answer. C. 2 points – correct answer and complete explanation.
2	2	A. 0 points – incorrect answer. B. 1 point – correct answer. C. 1 point – correct answer, incorrect explanation.
3	2	A. 0 points – incorrect answer. B. 1 point – correct answer. C. 1 point – correct answer, insufficient explanation for any credit (additional example only, lacking explanation of *why*).
4	0	Nothing is correct for credit in any part. In part A, "+" is clearly seen (and confirmed by the answer given in part B).
5	1	A. 0 points – incorrect answer. B. 0 points – incorrect answer. C. 1 point – correct answer, the explanation is insufficient for any credit.
6	2	A. 1 point – correct answer. B. 1 point – correct answer. C. 0 points – incorrect answer and incorrect explanation.
7	3	A. 0 points – incorrect answer (variable on one side of the equation). B. 1 point – correct answer. C. 2 points – correct answer and complete explanation.
8	3	A. 1 point – correct answer. B. 1 point – correct answer. C. 1 point – correct answer only; the explanation is insufficient for any credit.
9	2	A. 0 points – incorrect answer. B. 1 point – correct answer. C. 1 point – correct answer only; the explanation is insufficient for any credit.
10	4	A. 1 point – correct answer. B. 1 point – correct answer. C. 2 points – correct answer and complete explanation.