



Math
Spring Operational 2015

Grade 6
PBA Item #17
Expression for Total Dollars
VF643084

Prompt

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.



- ▶ Numbers
- ▶ Arithmetic and Units
- ▶ Exponents and Roots
- ▶ Relations
- ▶ Geometry
- ▶ Groups

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.



- ▶ Numbers
- ▶ Arithmetic and Units
- ▶ Exponents and Roots
- ▶ Relations
- ▶ Geometry
- ▶ Groups

Task is worth a total of 3 points.

VF643084 Rubric Part A

Score	Description
1	<p>Student response includes the following element.</p> <ul style="list-style-type: none"> • Modeling component = 1 point <ul style="list-style-type: none"> ○ Correct expression that represents the total amount of money raised <p>Sample Student Response:</p> <p style="padding-left: 40px;">15x</p> <p>Note: Any valid equivalent expression can receive credit.</p>

0	Student response is incorrect or irrelevant.
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VF643084 Rubric Part B

Score	Description
2	<p>Student response includes the following element.</p> <ul style="list-style-type: none"> • Modeling component = 1 point • Computation component = 1 point • The student shows a correct strategy to determine the amount of money by which the club exceeded its goal. • The student provides the amount of money by which the club exceeded its goal. <p>Sample Student Response:</p> <p>"15 × 43 = 645, and 645 – 500 = 145" OR "Using my expression, I multiplied 43 by \$15 to get a total of \$645 raised. I then subtracted \$500 from \$645 to get \$145 for the amount that the club exceeded its goal."</p> <p>Notes:</p> <ul style="list-style-type: none"> • The student may receive a combined total of 2 points if the modeling process is correct but the student makes one or more computational errors resulting in incorrect answers. • The student may receive a total of 2 points if he or she computes the correct answers but shows no work or insufficient work to indicate a correct modeling process. <p>If a student writes an incorrect model and answers the remaining prompts based on the model, he or she can receive 1 point for computation but no points for modeling.</p>

1	Student response includes 1 of the 2 elements.
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0	Student response is incorrect or irrelevant.
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Anchor Set

A1 – A8

Part A

$$15 \cdot x = 10$$

Part B

Work:

$$\begin{array}{r} 43 \\ \times 15 \\ \hline 645 \end{array}$$

$$\begin{array}{r} 645 \\ - 500 \\ \hline 145 \end{array}$$

The students exceeded their goal by \$145.

Annotations

Anchor Paper 1

Part A: Score Point 1

This response receives full credit. The student includes the required element:

- The student provides an expression of $15x$ or an expression equivalent to $15x$ ($\$15 \cdot x$).

Part B: Score Point 2

This response receives full credit. The student includes each of the two required elements:

- The response provides the correct amount of money by which the club exceeds its goal (*The students exceeded their goal by \$145*).
- The student provides a correct strategy to determine the amount of money by which the club exceeds its goal ($43 \times 15 = 645$, $645 - 500 = 145$).

Part A: Score Point 1

Part B: Score Point 2

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 \times x$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

Annotations

Anchor Paper 2

Part A: Score Point 1

This response receives full credit. The student includes the required element:

- The response provides an expression of $15x$ or an expression equivalent to $15x$ ($15 \times X$).

Part B: Score Point 2

This response receives full credit. The student includes each of the two required elements:

- The response provides the correct amount of money by which the club exceeds its goal (*so they exceeded theyre amount by \$145 dollars*).
- The response provides a correct strategy to determine the amount of money by which the club exceeds its goal (*43 times 15 = 645*). The response does not have to show $645 - 500 = 145$ to receive credit.

Part A: Score Point 1

Part B: Score Point 1

Part A

$$\$15 \cdot X = \text{---}$$

Part B

$$\begin{array}{r} 43 \\ \times 15 \\ \hline 645 \end{array}$$

yes they made it to there goal they made
645\$

Annotations

Anchor Paper 3

Part A: Score Point 1

This response receives full credit. The student includes the required element:

- The response provides an expression of $15x$ or an expression equivalent to $15x$ ($\$15 \cdot X = _$).

Part B: Score Point 1

This response receives partial credit. The student includes one of the two required elements:

- The response provides a correct strategy to determine the amount of money by which the club exceeds its goal ($43 \times 15\$ = 645$).

The response does not provide the amount of money by which the club exceeds its goal.

Part A: Score Point 0

Part B: Score Point 2

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$(\$15) \times 10 = \$150.00$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$43 \times 15 = 645$$

They exceed by \$145

Annotations

Anchor Paper 4

Part A: Score Point 0

This response receives no credit. The student does not include the required element:

The response does not provide an expression of $15x$ or an expression equivalent to $15x$ ($(\$15) \times 10 = \150.00).

Part B: Score Point 2

This response receives full credit. The student includes each of the two required elements:

- The response provides the correct amount of money by which the club exceeds its goal (*They exceed by \$145*).
- The response provides a correct strategy to determine the amount of money by which the club exceeds its goal ($43 \times 15 = 645$, *They exceed by \$145*).

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 \times x$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$500 \div 43 = 11.63$$

Annotations

Anchor Paper 5

Part A: Score Point 1

This response receives full credit. The student includes the required element:

- The response provides an expression of $15x$ or an expression equivalent to $15x$ ($15 \times X$).

Part B: Score Point 0

This response receives no credit. The student includes none of the two required elements.

The response does not provide the correct amount of money by which the club exceeds its goal (11.63). The response does not provide a correct strategy to determine the amount of money by which the club exceeds its goal ($500 \div 43 = 11.63$).

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 \times 1 = x$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

145

Annotations

Anchor Paper 6

Part A: Score Point 0

This response receives no credit. The student does not include the required element.

The response does not provide an expression of $15x$ or an expression equivalent to $15x$ ($15 \times 1 = x$).

Part B: Score Point 1

This response receives partial credit. The student includes one of the two required elements:

- The response provides the correct amount of money by which the club exceeds its goal (145).

The response does not attempt to provide a correct strategy to determine the amount of money by which the club exceeds its goal.

Part A: Score Point 0

Part B: Score Point 0

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 + 15 = 30$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$500 + 43 = 543$$

Annotations

Anchor Paper 7

Part A: Score Point 0

This response receives no credit. The student does not include the required element.

The response does not provide an expression of $15x$ or an expression equivalent to $15x$ ($15 + 15 = 30$).

Part B: Score Point 0

This response receives no credit. The student includes none of the two required elements.

The response does not provide the correct amount of money by which the club exceeds its goal (543). The response does not provide a correct strategy to determine the amount of money by which the club exceeds its goal ($500 + 43 = 543$).

Part A: Score Point 0

Part B: Score Point 0

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$x = \$15$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$43 \times 11 = 473$$

Annotations

Anchor Paper 8

Part A: Score Point 0

This response receives no credit. The student does not include the required element.

The response does not provide an expression of $15x$ or an expression equivalent to $15x$ ($x = \$15$).

Part B: Score Point 0

This response receives no credit. The student includes none of the two required elements.

The response does not provide the correct amount of money by which the club exceeds its goal (473). The response does not provide a correct strategy to determine the amount of money by which the club exceeds its goal ($43 \times 11 = 473$).

Practice Set
P101 - P105

Part A

$$x + 15 = 45$$

Part B

$$43 \times 15 = 645$$

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$\$15x$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$\begin{aligned} 43 \times 15 &= 645 \\ 645 - 500 &= \$145 \end{aligned}$$

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 \times x = \$$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

\$645 because you times 15 with 43 and you get that.

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$15 \times 10 = 150$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$15 \times 43 = 645$$

The students in a club are selling flowerpots to raise money. Each flowerpot sells for \$15.

Part A

Write an expression that represents the total amount of money, in dollars, the students raise from selling x flowerpots.

$$(\$15)x$$

Part B

The goal of the students in the club was to raise \$500. They sold 43 flowerpots. By what amount did the students exceed their goal of raising \$500? Show or explain all your work.

$$43 \times 15 = \$645$$

The exceeded their goal.

Practice Set

Paper	Score
P101	0,1
P102	1,2
P103	1,1
P104	0,1
P105	1,1