Virtual Learning

Essential Math 4

Unit 10 Lesson 6: Solving by Factoring

April 29, 2020

Essential Math 4
Lesson 6: April 29, 2020

Learning Target:
I can solve algebraic equations by factoring.

You will explore the use of area models to factor algebraic expressions and solve for the zeros.

Directions:

1. Click through the slides.
2. Watch all videos on slides.
3. Do what each slide asks on a separate sheet of paper.

Watch the video and then do the Bell Work Problem:

$$3x + 7 = 19$$

Bell Work **Key**
April 29, 2020

$$3x + 7 = 19$$
$$ -7 \quad -7$$
$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

Practice Problems:
Unit 10
Lesson 6
page 29, 1-4

IMPORTANT STUFF

Do problem 1 or problems 2-4, which offer suggestions.

① Use the clues below to solve for the values.

$$(\triangle + 7)(\bigstar - 5)(\pentagon + 4) = 0$$

$$(\triangle + 7)(\bigstar - 5) = -10$$

$$(\triangle + 7) = 10$$

$$\triangle = \underline{\quad}$$

$$\bigstar = \underline{\quad}$$

$$\pentagon = \underline{\quad}$$

② $\triangle + 7 = 10$ $\qquad \triangle = \underline{\quad}$

③ Substitute what you know, and then solve.

$$(\triangle + 7)(\bigstar - 5) = -10$$

Think: $(\,10\,)(\,?\,) = -10$ $\qquad \bigstar = \underline{\quad}$

④ Substitute what you know, and then solve.

$$(\triangle + 7)(\bigstar - 5)(\pentagon + 4) = 0$$

$$\pentagon = \underline{\quad}$$

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Answer Key:

Once you have completed the problems, check your answers for page 29 here.

IMPORTANT STUFF

Do problem 1 *or* problems 2-4, which offer suggestions.

① Use the clues below to solve for the values.

$(\triangle + 7)(\bigstar - 5)(\pentagon + 4) = 0$

$(\triangle + 7)(\bigstar - 5) = -10$

$(\triangle + 7) = 10$

$\triangle = \underline{3}$

$\bigstar = \underline{4}$

$\pentagon = \underline{-4}$

② $\triangle + 7 = 10$ $\triangle = \underline{3}$

③ Substitute what you know, and then solve.

$(\triangle + 7)(\bigstar - 5) = -10$

Think: $(\boxed{10})(\boxed{?}) = -10$ $\bigstar = \underline{4}$

④ Substitute what you know, and then solve.

$(\triangle + 7)(\bigstar - 5)(\pentagon + 4) = 0$

$\pentagon = \underline{-4}$

Practice Problems: Unit 10 Lesson 6 (page 29, 5)

Discuss & Write What You Think

⑤ How could you know that (⬟ + 4) equals zero *without* figuring out 🔺 and ⭐ first?

Answer Key:

Once you have completed the problems, check your answers for page 29 here.

Discuss & Write What You Think

⑤ How could you know that (⬟ + 4) equals zero *without* figuring out ▲ and ★ first?

Since (▲ + 7) (★ − 5) (⬟ + 4) = 0, we know at least one of the three factors is zero, and (▲ + 7) (★ − 5) = -10 shows that neither (▲ + 7) nor (★ − 5) is zero.

Practice Problems: Unit 10 Lesson 6 (page 29, 6-7)

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⑥ Use the clues below to solve for the values.

$$(\blacklozenge + 4)(\blacksquare - 7) = 0$$

$$\blacklozenge + 4 = 1$$

$$\blacklozenge = \underline{\hspace{2cm}}$$

$$\blacksquare = \underline{\hspace{2cm}}$$

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⑦ Use the clues below to solve for the values.

$$\bullet^2 - \bullet - 56 = 0$$

$$(\bullet + 7)(\bullet - 8) = \bullet^2 - \bullet - 56$$

$$\bullet = \underline{\hspace{1.5cm}} \text{ or } \underline{\hspace{1.5cm}}$$

Answer Key:

Once you have completed the problems, check your answers for page 29 here.

⑥ Use the clues below to solve for the values.

$(\blacklozenge + 4)(\blacksquare - 7) = 0$

$\blacklozenge + 4 = 1$

$\blacklozenge = \underline{-3}$

$\blacksquare = \underline{7}$

⑦ Use the clues below to solve for the values.

$\bullet^2 - \bullet - 56 = 0$

$(\bullet + 7)(\bullet - 8) = \bullet^2 - \bullet - 56$

$\bullet = \underline{-7}$ or $\underline{8}$

Practice Problems: Unit 10 Lesson 6 (page 29, 8)

⑧ This time you know the solution. Write some clues that would give these answers.

$\blacksquare = \underline{7}$

$\blacktriangle = \underline{0}$

$\bullet = \underline{-3}$

Answer Key:

Once you have completed the problems, check your answers for page 29 here.

⑧ This time you know the solution. Write some clues that would give these answers.

$(\blacksquare - 7)(\blacktriangle + 2)(\bullet + 1) = 0$

$(\blacktriangle + 2)(\bullet + 10) = 14$

$\blacktriangle + 2 = 2$
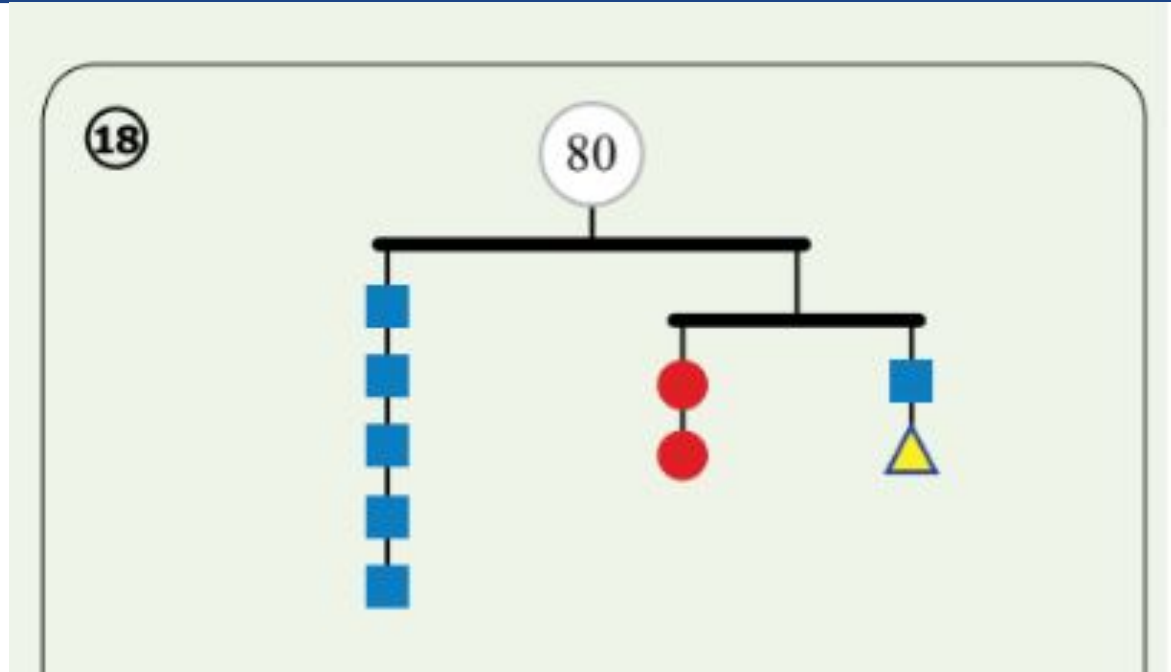
(Responses will vary. One possibility shown.)

$\blacksquare = \underline{7}$

$\blacktriangle = \underline{0}$

$\bullet = \underline{-3}$

Just for fun!

⬛ _____ 🔴 _____ 🔺 _____

Just for fun!
Key
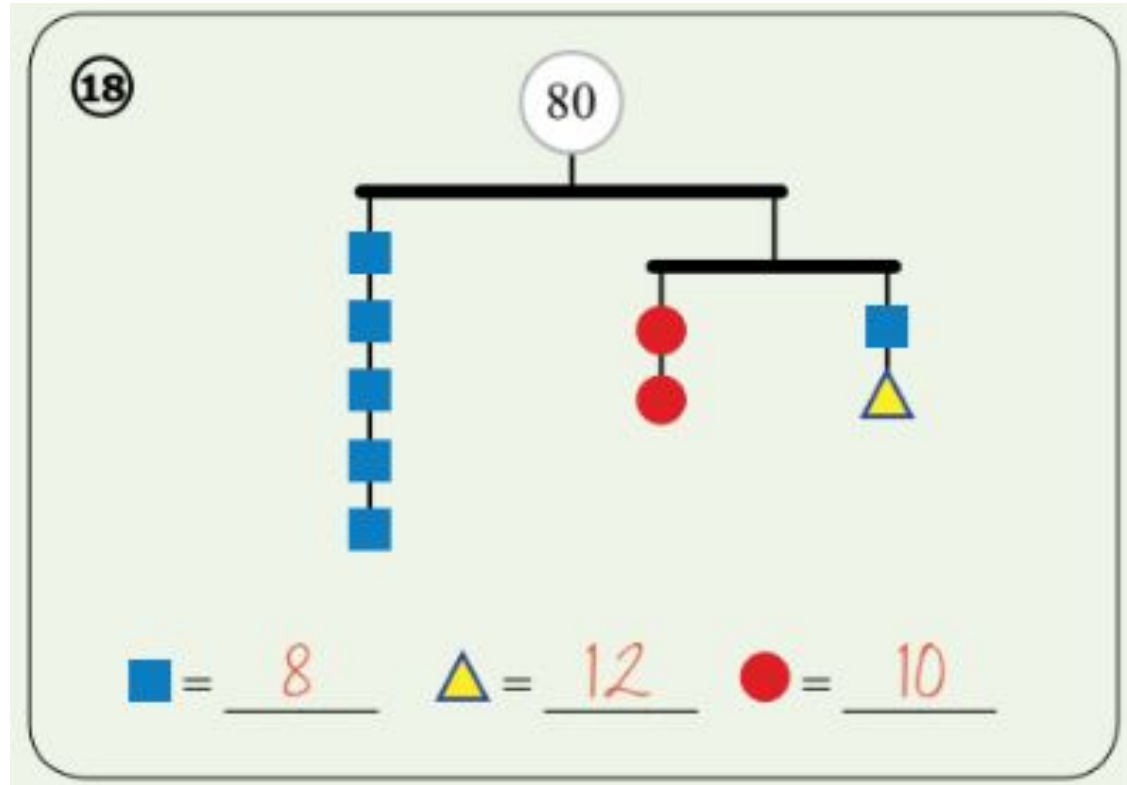
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