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When placing the sign, think of the following:

- if the signs on the two integers are the same, the answer is positive.
- if the signs on the two integers are the different, the answer is negative.

$$3 \times -5 = -15$$

multiply the digits

There is one negative sign in 3×-5 .
The answer is negative.

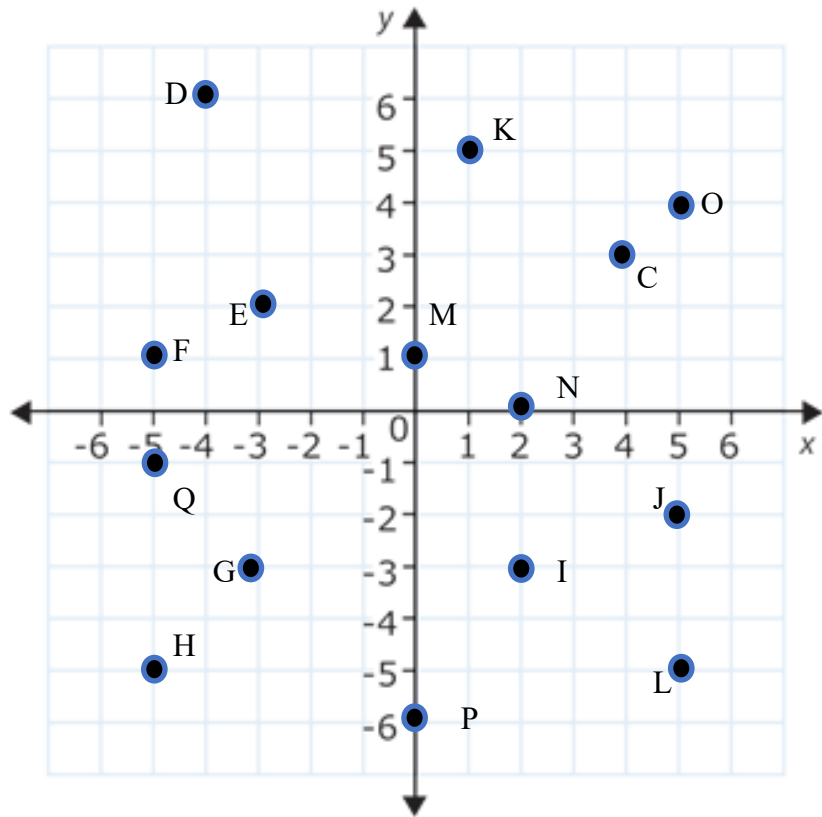
$$-3 \times -5 = 15$$

There are two negative signs in -3×-5 .
The answer is positive.

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6. Write the coordinates for each ordered pair.

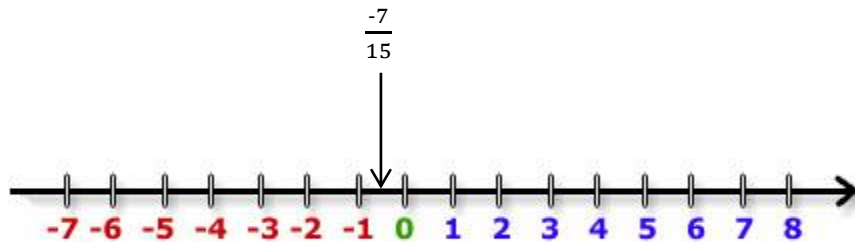
- | | | |
|----------------------|----------------------|----------------------|
| $D(\quad , \quad)$ | $E(\quad , \quad)$ | $F(\quad , \quad)$ |
| $G(\quad , \quad)$ | $H(\quad , \quad)$ | $I(\quad , \quad)$ |
| $J(\quad , \quad)$ | $K(\quad , \quad)$ | $L(\quad , \quad)$ |
| $M(\quad , \quad)$ | $N(\quad , \quad)$ | $O(\quad , \quad)$ |
| $P(\quad , \quad)$ | $Q(\quad , \quad)$ | |



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A negative fraction can be shown on a number line.

- $\frac{-7}{15}$ is less than 0 but greater than -1.
- It is located between 0 and -1 on the number line. It is almost halfway between 0 and -1.



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Example 3

Simplify each expression.

a) $4x + 7 - 2x$

Solution

$$\begin{aligned} \text{a) } 4x + 7 - 2x \\ &= (4 - 2)x + 7 \\ &= 2x + 7 \end{aligned}$$

The $4x$ and $2x$ are like terms.
The 7 is not a like term. Leave it alone.

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To solve $x + 2 = -3$, you might use a process like the one shown below.

Try $x = 0$.

$$\begin{aligned} x + 2 &= 0 + 2 \\ &= 2 \end{aligned}$$

2 is larger than -3 .
0 is too large a guess.

Try $x = -6$.

$$\begin{aligned} x + 2 &= -6 + 2 \\ &= -4 \end{aligned}$$

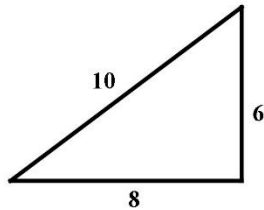
-4 is smaller than -3 .
 -6 is too small a guess.

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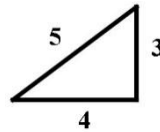
7.3 Scale Diagrams

Two triangles are shown below. The sides of triangle A are twice as long as the sides of triangle B.

Triangle A



Triangle B



Triangle B has been reduced in size. A **reduction** of an image makes it smaller, but does not change its shape. To find the lengths of the sides in triangle B, you can divide each side of triangle A by 2 or multiply each side in triangle A by $\frac{1}{2}$.

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Example 2

Find the probability of selecting a 3 from a deck of playing cards, replacing it in the deck, and then selecting a queen from the deck.

Solution

There would be a lot of outcomes if the sample space were listed. The pattern can be used to find the probability.

$$P(\text{selecting a 3}) = \frac{4}{52} \text{ or } \frac{1}{13}.$$

$$P(\text{selecting a queen}) = \frac{4}{52} \text{ or } \frac{1}{13}.$$

$$\begin{aligned} P(\text{selecting a 3 and then selecting a queen}) &= \frac{1}{13} \times \frac{1}{13} \\ &= \frac{1}{169} \end{aligned}$$