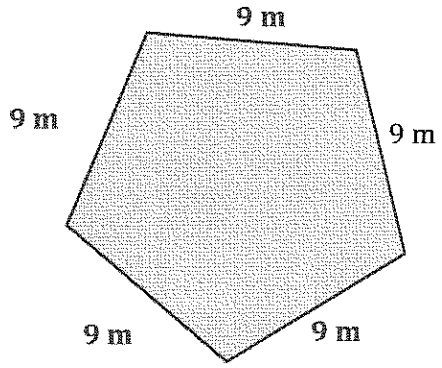
G3-M7-Lesson 14

1. Label the unknown side lengths of the regular shapes below. Then, find the perimeter of each shape.

a.

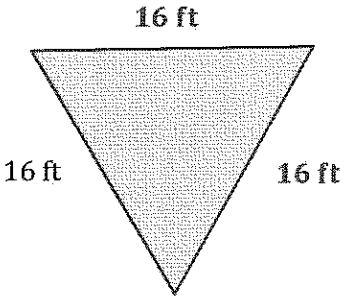


$\text{Perimeter} = 5 \times 9 \text{ m} = 45 \text{ m}$

Since this shape is a regular pentagon, I know that all the side lengths are equal. So each of the 5 sides measures 9 m.

I can write a repeated addition sentence to find the perimeter, but a multiplication sentence is more efficient. I can write 5×9 m. 5 represents the number of sides, and 9 m is the length of each side.

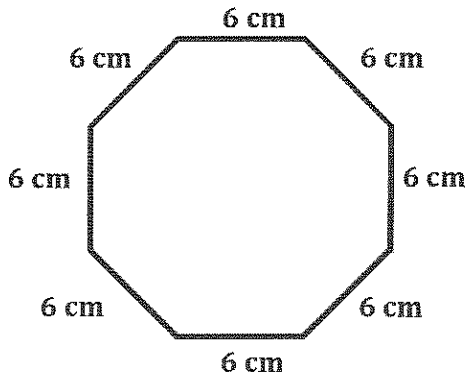
b.



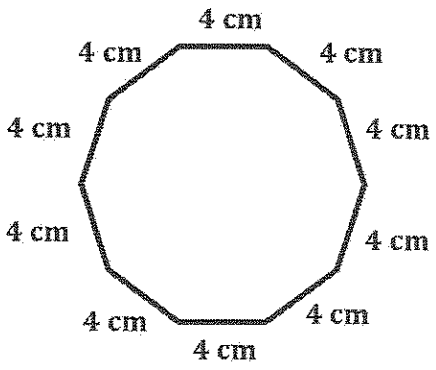
$$\begin{aligned}\text{Perimeter} &= 3 \times 16 \text{ ft} \\ &= (3 \times 10 \text{ ft}) + (3 \times 6 \text{ ft}) \\ &= 30 \text{ ft} + 18 \text{ ft} \\ &= 48 \text{ ft}\end{aligned}$$

I can use the break apart and distribute strategy to solve for a large fact like 3×16 ft. I can break apart 16 ft as 10 ft and 6 ft since multiplying by tens is easy. Then I can add the two smaller facts to find the answer to the larger fact.

2. Jake traces a regular octagon on his paper. Each side measures 6 centimeters. He also traces a regular decagon on his paper. Each side of the decagon measures 4 centimeters. Which shape has a greater perimeter? Show your work.



$\text{Perimeter} = 8 \times 6 \text{ cm} = 48 \text{ cm}$



$\text{Perimeter} = 10 \times 4 \text{ cm} = 40 \text{ cm}$

Jake's octagon has a greater perimeter by 8 cm.

Even though a decagon has more sides than an octagon, the side lengths of Jake's octagon are longer than the side lengths of his decagon. That's why Jake's octagon has a greater perimeter.