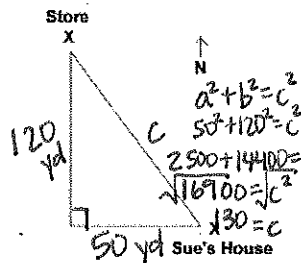


8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in 2 and 3 dimensions.

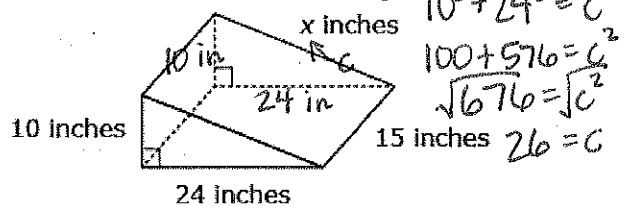
Sue left her house traveling due west towards the store. After 50 yards she traveled due north 120 yards to the store. When she left the store she cut across the field and traveled along a straight path. How much shorter was the path Sue took home than the path she took to the store?



- 130 yds
- A) 40 yards B) 61 yards 120 + 50 = 170 yds
- C) 70 yards D) 109 yards
- 170 - 130 = 40 yds shorter

Ashley is making a skateboard ramp in the shape of a triangular prism. The figure shows three dimensions of the ramp. What is the missing dimension in inches, x , of Ashley's skateboard ramp?

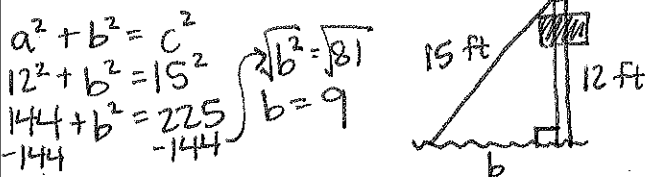
Skateboard Ramp



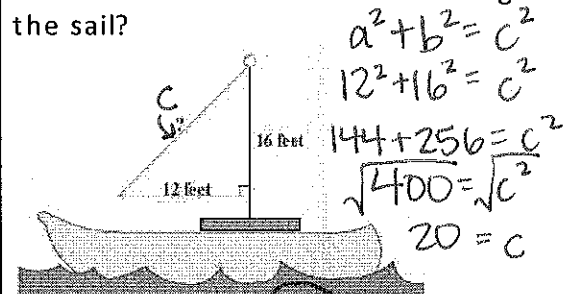
- A) 22 B) 26
- C) 27 D) 34

To secure a telephone pole, a steel cable will be attached to a ring on the pole 12 feet above the ground. If the cable is 15 feet long, how far from the base of the pole will the end of the cable be anchored?

- A) 3 feet B) 9 feet
- C) 12 feet D) 15 feet

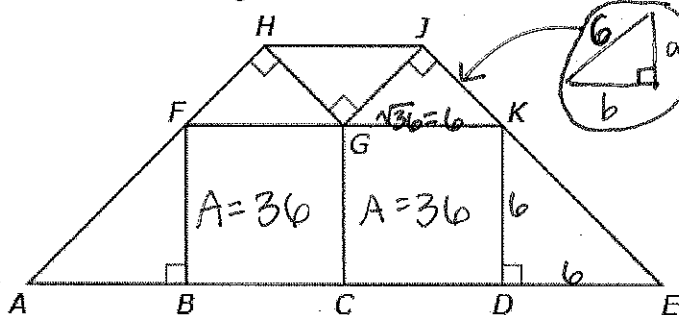


What is the measure of the missing side of the sail?



- A) 18 feet B) 20 feet
- C) 22 feet D) 24 feet

A large picture window is made from 7 pieces of glass: 2 large squares, 2 large isosceles triangles, and 3 small isosceles triangles. Adjacent figures share sides and vertices, as shown in the diagram of the window. The area of square BCGF is 36 square feet.



Part A: What is the length of segment JK? Explain.

$JK = \sqrt{18} \text{ ft}$

Part B: What is the length of segment HJ? Explain.

$HJ = 6 \text{ ft}$

Part C: What is the length of segment KE? Explain.

$KE = \sqrt{72} \text{ ft}$

Handwritten notes for Part C: $a^2 + b^2 = c^2$, $b^2 + b^2 = c^2$, $36 + 36 = c^2$, $\sqrt{72} = \sqrt{c^2}$, $\sqrt{72} = c$