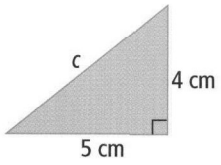
Day 2 - Questions Handout

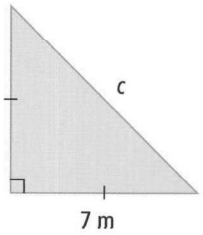
#s 6, 7, 8, 10, 12, 13, 17, 18 & 19

6. Find the length of the hypotenuse of each triangle. Round your answers to the nearest tenth.

a)

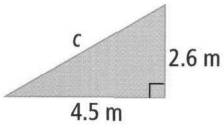


b)



7. Find the length of the hypotenuse of each triangle. Round your answers to the nearest tenth.

a)



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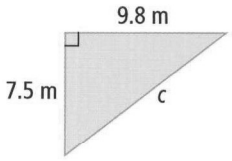


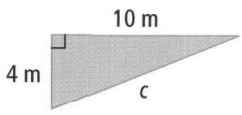
For help with question 8, refer to Example 2.

8. Which of the following could be the side lengths of a right triangle? Explain how you came to your conclusions.

a) 2 cm, 4 cm, 5 cm
b) 6 cm, 8 cm, 10 cm
c) 9 cm, 15 cm, 12 cm
d) 12 cm, 8 cm, 7 cm

9. For each triangle, estimate the length of the hypotenuse. Then, use a calculator to find the approximate length to the nearest tenth.

a)



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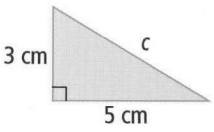
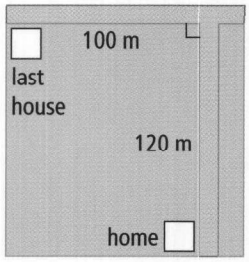


Did You Know?

In construction, a 3-4-5 right triangle is often used to check that an angle is 90° or "square." For example, measurements of 3 m and 4 m away from a corner are taken and marked. If the marks are 5 m apart, then the corner is square.

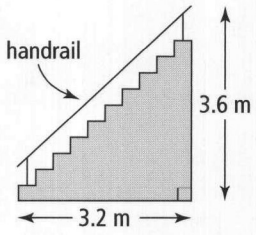
Apply

10. Ahmed delivers newspapers. He starts from home and goes down his street a distance of 120 m. Then, he turns left at the corner and goes another 100 m to the last house on his route. Ahmed has a walkie-talkie with a range of 150 m. Can he call his brother, who is at home, from the farthest point on his route?



11. Simon wants to make a right-triangular brace for a picture frame to lean on. He wants the horizontal and vertical parts to measure 5 cm and 10 cm, respectively. What length of material is required to make the slant of the brace?

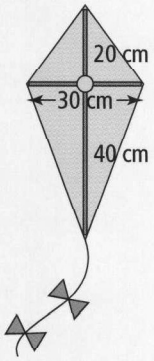
12. Tia is making a handrail for a staircase. The staircase rises 3.6 m over a horizontal distance of 3.2 m. How long should the handrail be, to the nearest tenth of a metre?



13. On his way to the cinema, Tony needs to cross a rectangular parking lot. The lot measures 80 m by 85 m. How many metres fewer will Tony walk if he goes diagonally across the lot rather than walking the length and width? Round your answer to the nearest metre.

Chapter Problem

14. Katie and Tim are building a kite. They use two wooden sticks, one measuring 30 cm and the other measuring 60 cm, to form the frame. The centre point of the shorter stick is attached to a point one third of the way from the end of the longer stick.



a) To the nearest tenth of a centimetre, how much ribbon will they need to glue around the four outer edges of the kite paper?

b) What area of kite paper do they need to cover one side of the frame?

15. A square tablecloth has an area of 1 m^2.

a) What is the length of each side of the tablecloth, in centimetres?

b) What is the diagonal distance across the tablecloth, to the nearest centimetre?

16. Cynthia wants to press some flowers between the pages of a large book. The book measures 25 cm by 35 cm. What is the length of the longest flower that she can place entirely between two pages in this book?

17. Jessie is preparing a gymnastics routine for an upcoming competition. Each of her cartwheels uses a distance of 2.5 m to complete. How many cartwheels can she perform along the diagonal of an 8 m by 8 m gymnasium mat?

Try This!

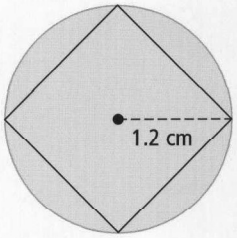
18. A doorway is 0.78 m wide and 2.00 m high. Will a round tabletop with a diameter of 2.50 m fit through the doorway?

a) Draw and label a diagram to model the problem.

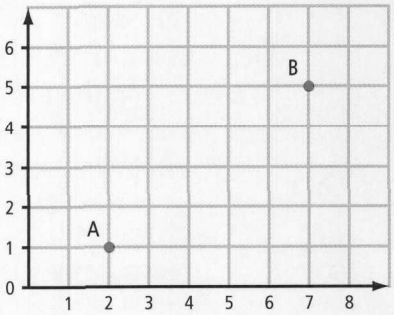
b) Use numbers and words to justify your answer.

Extend

19. A square peg fits snugly inside a round hole, as shown. What is the perimeter of the square, to the nearest millimetre?



20. What is the length of the shortest path from point A to point B?



21. A fishing boat leaves St. John's, Newfoundland and Labrador, and travels due north at 7.2 km/h for 2 h. Then, the boat turns due east and continues its journey, at the same speed, for another half an hour. How far is the ship from St. John's after the $2\frac{1}{2}$ h at sea?