Check Your Understanding
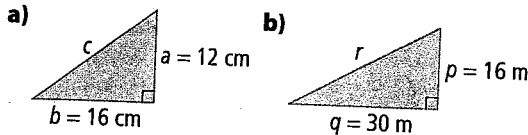
Practise

For help with #3 and #4, refer to Example 1 on page 102.
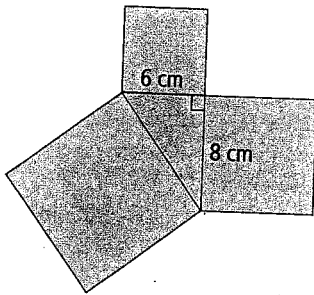
3. Determine the length of each hypotenuse.

a)
c, $a = 12$ cm, $b = 16$ cm

b)
r, $p = 16$ m, $q = 30$ m

4. What is the length of each hypotenuse? Give your answer to the nearest tenth of a centimetre.

a)
$y = 7$ cm, z, $x = 6$ cm

b)
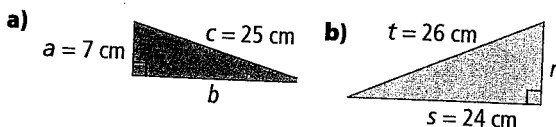d, $b = 8$ cm, $c = 11$ cm
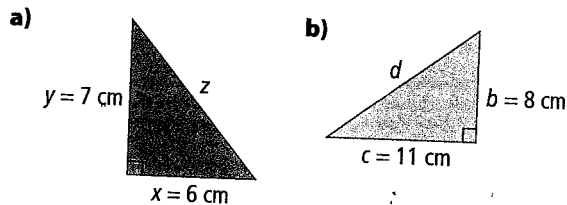
5. a) What is the area of each square attached to the legs of the right triangle?

6 cm
8 cm

b) What is the area of the square attached to the hypotenuse?

c) What is the length of the hypotenuse?

For help with #6 and #7, refer to Example 2 on page 102.

6. Determine the length of the leg for each right triangle.

a)
$a = 7$ cm, $c = 25$ cm, b

b)
$t = 26$ cm, r, $s = 24$ cm

7. What is the missing length of the leg for each triangle? Give your answer to the nearest tenth of a millimetre.

a)
h, $i = 9$ mm, $g = 5$ mm
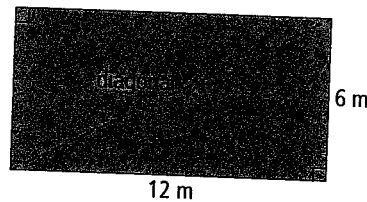
b)
$q = 11$ mm, p, $r = 15$ mm
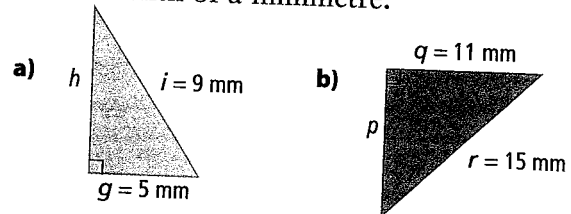
Apply

8. The side view of a ramp at a grocery store is in the shape of a right triangle. Determine the length of the ramp, to the nearest centimetre.

50 cm
200 cm

9. Tina wants to construct a path along the diagonal of her yard. What length will the path be? Express your answer to the nearest tenth of a metre.

6 m
12 m

10. What is the minimum distance the player at third base has to throw the ball to get the runner out at first base? Express your answer to the nearest tenth of a metre.

second base
first base
third base 27 m
home plate
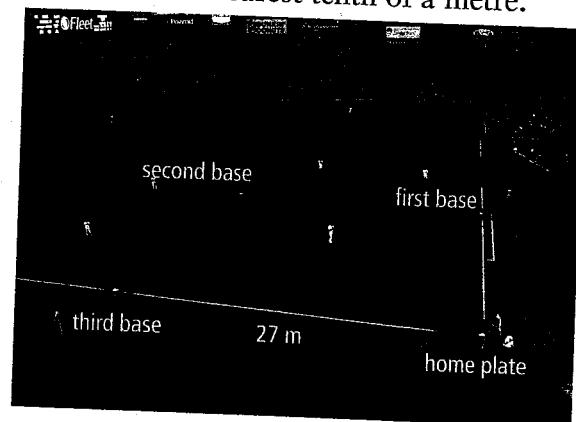
11. The right triangle below has a square attached to its hypotenuse. What is the perimeter of the triangle? Give your answer to the nearest tenth of a centimetre.

914 cm²

17 cm
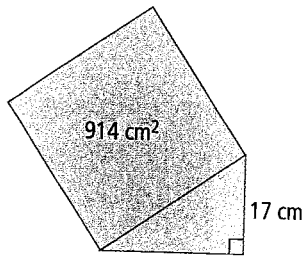
12. The hypotenuse of the triangle cuts the circle in half. What is the diameter of the circle? Express your answer to the nearest tenth of a centimetre.

■ cm

7 cm

5 cm
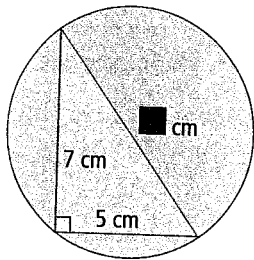
13. Determine the length of the base of the large triangle. Express your answer to the nearest tenth of a millimetre.

10 mm   10 mm
8 mm
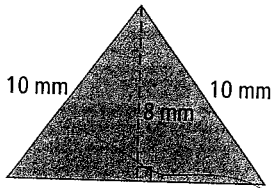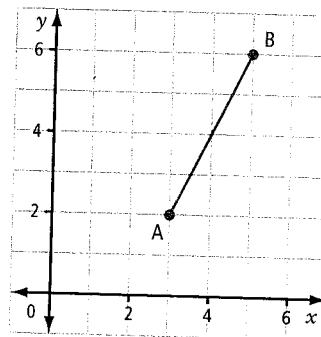
14. What are the lengths of b and c? Write your answer to the nearest tenth of a metre where appropriate.
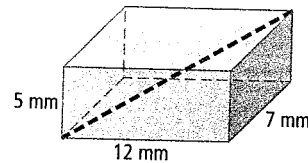
c

b   5 m

←3 m→ ←3 m→
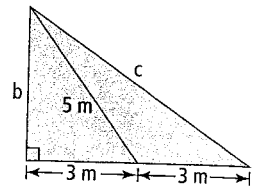
Extend

15. The coordinate grid shown was drawn on centimetre grid paper. What is the length of line segment AB? Express your answer to the nearest tenth of a centimetre.

y

6   B

4

2
A

0   2   4   6   x

16. What is the length of the red diagonal in the box? Express your answer to the nearest tenth of a millimetre:

5 mm

7 mm

12 mm

MATH LINK

For each of the following questions, express your answer to the nearest tenth of a centimetre.
• What is the distance between A and B? Explain.
• If you have to follow the lines on the game board, what is the shortest distance between C and D?
• If you do not have to follow the lines on the game board, what is the shortest distance between C and D? Justify your answer.

5 cm   A

5 cm
C

B
D