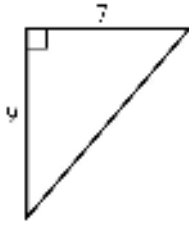


Pythagoras' theorem Assignment

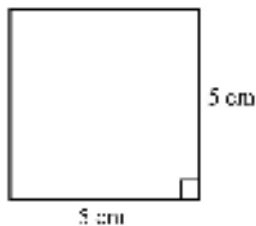
Section A Multiple Choice

- 1 What is the length of the hypotenuse in this figure?



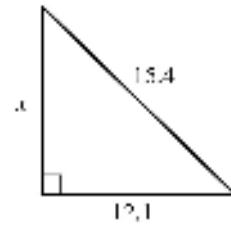
- A 2.8
- B 7
- C 8.5
- D 10
- E 11.4

- 2 What is the length of the diagonal of a square which has sides of 5 cm as shown in the figure?



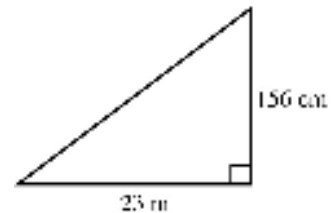
- A 4 cm
- B 7.1 cm
- C 9 cm
- D 10.3 cm
- E 12.4 cm

- 3 Name: _____ What is the value of the pronumeral in the figure correct to 2 decimal places?



- A 9.53
- B 10.21
- C 11.34
- D 12.51
- E 17.62

- 4 What is the length of the third side in cm?

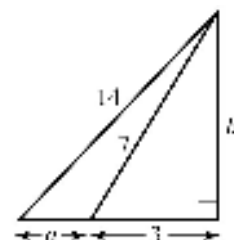


- A 1988 cm
- B 2035 cm
- C 2176 cm
- D 2305 cm
- E 2987 cm

- 5 A ladder 8 m long leans against a wall. The foot of the ladder is 130 cm from the wall. How far up the wall does the ladder reach?

- A 650 cm
- B 789 cm
- C 799 cm
- D 824 cm
- E 935 cm

Questions 6 and 7 refer to the figure.



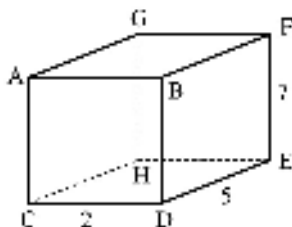
- 6 What is the value of b ?
 A 6.3
 B 8.5
 C 9.9
 D 10.2
 E 11.5

- 7 What is the value of a ?
 A 5.4
 B 8.1
 C 9.5
 D 12.4
 E 15.8

- 8 For each set of 3 numbers, which set could possibly represent the sides of a right-angled triangle?
 A 1, 2, 3
 B 11, 15, 17
 C 3, 4, 5
 D 23, 11, 16
 E 43, 17, 31

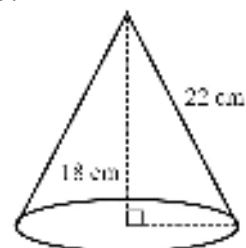
- 9 Which is the Pythagorean triad using the values of $x = 7$ and $y = 9$?
 A 23, 27, 33
 B 18, 19, 1
 C 13, 12, 15
 D 32, 126, 130
 E 45, 18, 27

- 10 What is the length of HD in the figure?



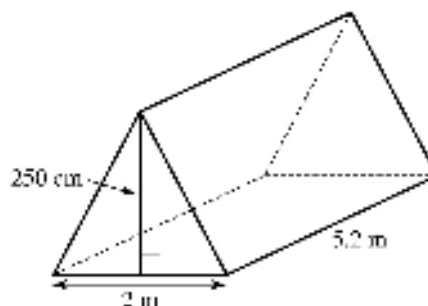
- A 5.39
 B 4.29
 C 3.76
 D 2.4
 E 1.75

- 11 The sloping side of a cone is 22 cm and the height is 18 cm. What is the radius of the base?



- A $\sqrt{18}$ cm
 B $\sqrt{160}$ cm
 C $\sqrt{40}$ cm
 D $\sqrt{198}$ cm
 E $\sqrt{396}$ cm

- 12 What is the value of the sloping edge (in metres) in the figure?

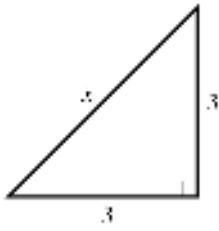


- A 0.8
 B 1.5
 C 2.69
 D 3.2
 E 5.8

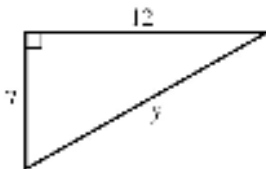
Section B Short/Extended answer

1 Write down the value of the pronumeral in each figure.

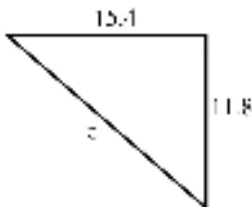
(a)



(b)

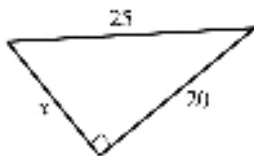


(c)

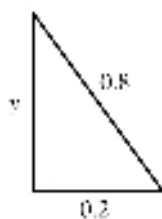


2 Write down the value of the pronumeral in each of the figures. Give answers correct to 2 decimal places.

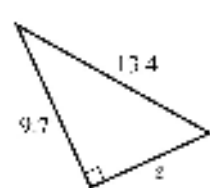
(a)



(b)



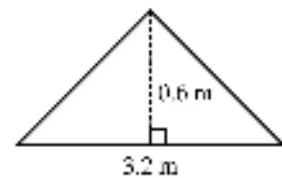
(c)



3 Find the distance up a vertical wall which a 3 m ladder will reach, if the foot of the ladder is 0.9 m from the bottom of the wall.

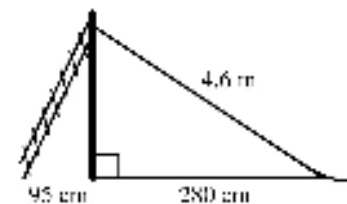
4 A yacht sails 7.6 km north then travels a further 2.8 km west. How far is the yacht directly from its starting point?

5 The span of a roof for a doll's house is 3.2 m and it rises to a height of 0.6 m in the centre. If the width of the timber is the same as the depth of the house, what length of timber is needed to create the sloping sides of the roof?



6 Find the height (in cm) of an equilateral triangle with side lengths of 180 mm.

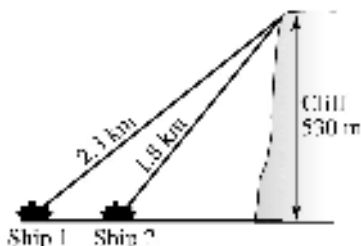
7 A child's slide 4.6 m long is to be placed 280 cm from the base of a supporting pole and 95 cm from the base of the climbing stairs as shown in the figure.



(a) Find the height of the pole.

(b) What is the length of the stairs?

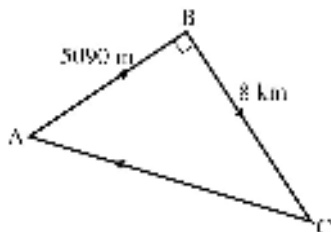
8 Christov looks out towards the sea from the top of a cliff and notices 2 ships. What is the distance between the 2 ships as shown in the figure?



9 Spiro builds 2 rectangular gates from timber. The gate is 130 cm high and 2.7 m wide. For added support, he puts 2 diagonals which cross each other in each gate.

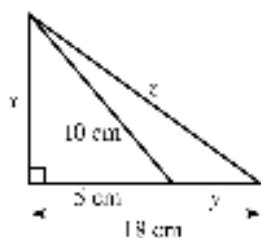
- (a) What is the total length of wood needed for the diagonals?
- (b) What is the cost of one gate if the wood is \$1.50 per metre?

10 A boat follows the race course as shown in this figure.

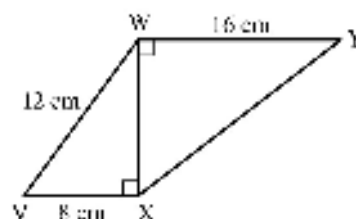


- (a) Find the distance AC.
- (b) What was the total distance covered?

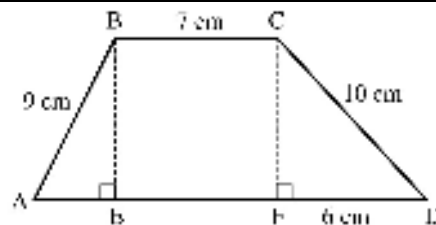
11 Find the values of the pronumerals.



12 Find the distance WX and XY.

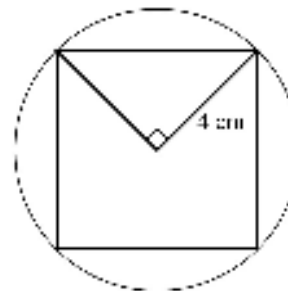


13



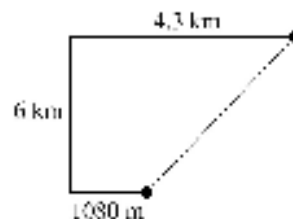
- (a) Find the distances AE and CF.
- (b) Find the perimeter.

14 Find the perimeter of the square inscribed in a circle of radius 4 cm.



15 Joe and Kim go bike riding. They travel 4.3 km west then 6 km south then 1080 m east as shown.

What is their distance from their starting position?



16 Complete the following Pythagorean triads. 4

- (a) 3, 4, ___
 (b) 7, 24, ___
 (c) 9, __, __
 (d) 15, __, __

17 Use the Pythagorean triad to create three other Pythagorean triads. 6

- (a) 7, 24, 25
 (b) 3, 4, 5
 (c) 5, 12, 13

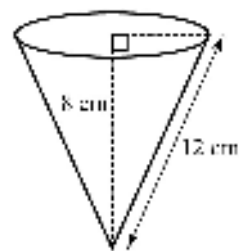
18 Find the middle number and then the largest number of a Pythagorean triad if the smallest number is: 6

- (a) 7
 (b) 15
 (c) 23

19 Find Pythagorean triads using the following values of x and y . 6

- (a) 6 and 4
 (b) 1 and 2
 (c) 9 and 12

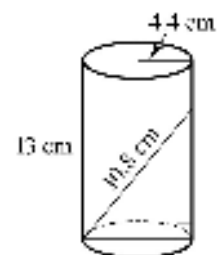
20 Belinda buys an ice cream cone with dimensions as shown. 4



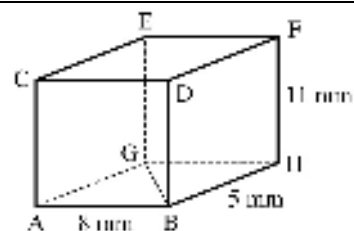
- (a) Find the radius of the cone.
 (b) What diameter will be required for a spherical ice cream scoop to fit on top of the cone?

21 Dimitri was drinking his can of Sprite when his 10.8 cm straw fell inside the can. The can has a radius of 4.4 cm and height 13 cm as shown. 4

How far below the top of the can does the straw lie?

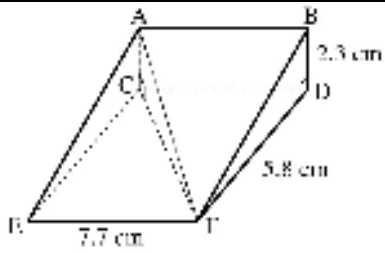


22 4



- (a) Find the distance GB and hence find the distance EB.
 (b) Find the volume of the prism.

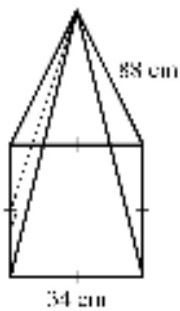
23



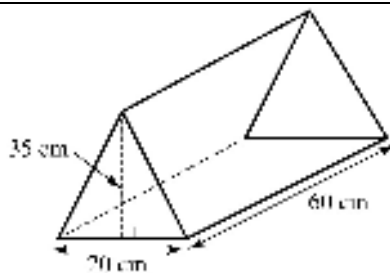
6

Find the distances BF, CF then AF in the figure.

- 24 The square-based pyramid has a base length of 34 cm and a sloping edge of 88 cm. Find the height of one of the sloping faces.



25



4

A block of cheese is in the shape of a triangular prism with height 35 cm. The width across the base is 20 cm and the cheese block is 60 cm long.

- Find the unknown dimension of a sloping side in metres.
- Find the area of the sloping sides.