

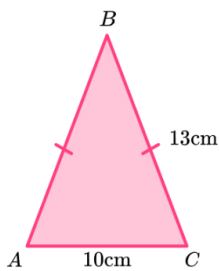


## STANDARD 7<sup>TH</sup>: CHAPTER 13

### Pythagoras Theorem

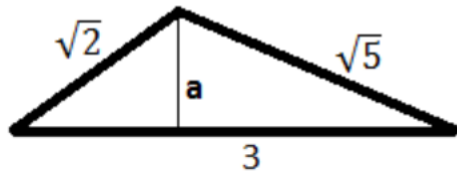
#### Q.1. Choose the correct alternative

1. A ship sails  $6\text{km}$  East and then  $8\text{km}$  North. Find the ship's distance from its starting point.
  - a.  $14\text{Km}$
  - b.  $10\text{Km}$
  - c.  $12.5\text{Km}$
  - d.  $13\text{Km}$
2. A ladder is  $5\text{m}$  long. The base of the ladder is  $3\text{m}$  from the base of a vertical wall. How far up the wall does the ladder reach?
  - a.  $3.5\text{m}$
  - b.  $5\text{m}$
  - c.  $4\text{m}$
  - d.  $6\text{m}$
3. ABC is an isosceles triangle. Find the height of isosceles triangle.



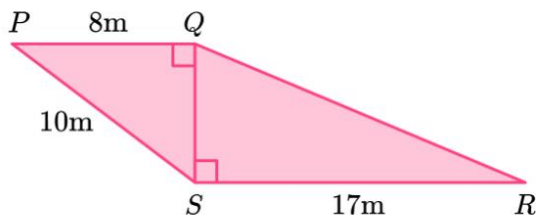
- a.  $12\text{cm}$
- b.  $8\text{cm}$
- c.  $13\text{cm}$
- d.  $9\text{cm}$

4. Calculate the height of the triangle:



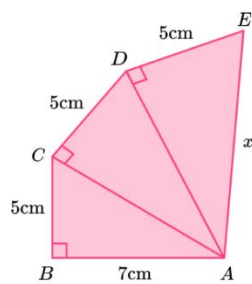
- a. 2
- b.  $\frac{1}{2}$
- c. 1
- d. 3

5.  $PQRS$  is made from two right angled triangles.



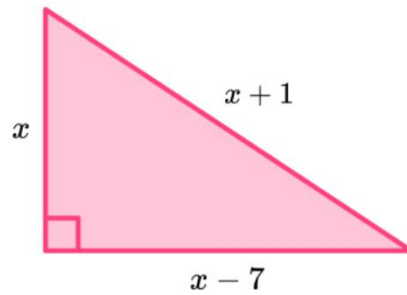
- a. 14m
- b. 17m
- c. 6m
- d. 18m

6. Here is a pattern made from right angled triangles. Work out the length  $x$ .



- a. 12.2m
- b. 13.14m
- c. 11.1m
- d. 16.15m

7. Form an equation and use it to work out the value of  $x$ .



- a. 4
- b. 12
- c. 11
- d. 10

8. Julie wanted to wash her building window which is 12 feet off the ground. She has a ladder that is 13 feet long. How far should she place the base of the ladder away from the building?

- a. 7 feet
- b. 6 feet
- c. 5 feet
- d. 4 feet

9. Find the perimeter of a rectangle whose length is 150 m and the diagonal is 170 m.

- a. 460m
- b. 480m
- c. 450m
- d. 500m

10. The height of two buildings is 34 m and 29 m respectively. If the distance between the two buildings is 12 m, find the distance between their tops.

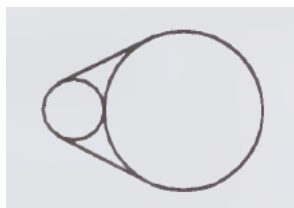
- a. 15m
- b. 16m
- c. 13m
- d. 17m

## Q.2 Solve the following question

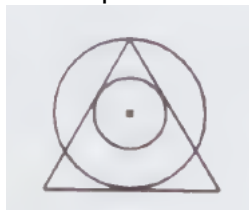
1. State and prove Pythagoras Theorem.
2. The side of a triangle are of length 4.5 cm, 7.5 cm and 6 cm. Is this triangle a right triangle? If so, which side is the hypotenuse?
3. The radius of larger semicircle is 2cm. What is the radius of small semicircle?



4. A metal band is wrapped tightly around pipes of radius 3cm and 9cm. What is the length of the band? Express your answer in simplest radical form.



5. Suppose the shorter leg of a right triangle is 22. The longer leg is twice the shorter leg. Find the hypotenuse.
6. Chord AB is 18cm long and tangent to the smaller of two concentric circles. What is the area between the two circles?
7. What is the area of the smaller of the two concentric circles if the side length of the equilateral triangle is 8cm?



8. Given a square plot of land with distance between two opposite vertexes of  $2\sqrt{2}$  kilometres. Calculate the total area of the plot.
9. State and prove converse of Pythagoras Theorem.
10. Write 5 examples of Pythagorean Triplets.