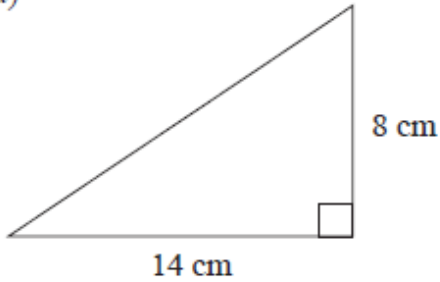


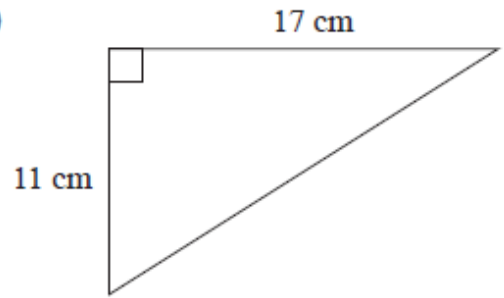
Pythagoras Revision

1. Calculate the length of the unknown side in each of the following triangles:

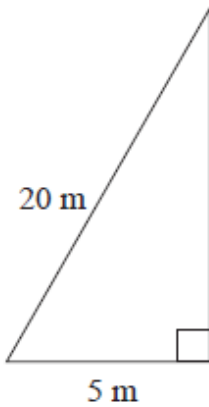
(a)



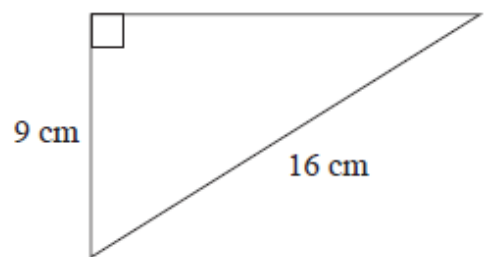
(b)



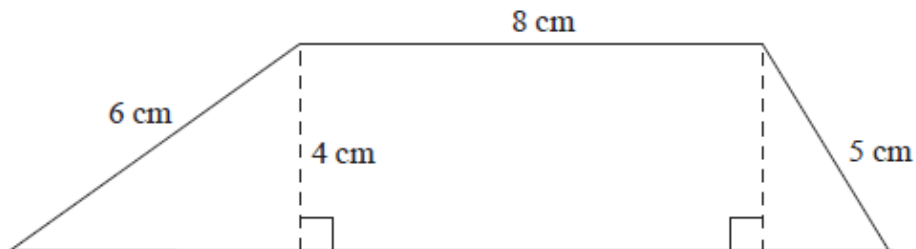
(c)



(d)



2. A rectangle has sides of length 14 cm and 7 cm. Calculate the length of a diagonal of the rectangle.
3. A ship sails 100 km north and then 200 km east. How far is the ship from its starting point?
4. Calculate the area and perimeter of this trapezium:



5. A square has a diagonal of length 40 cm. Determine the length of the sides of the square.

Answers

1a) 16.1 b) 20.2 c) 19.4 d) 13.2 2) 15.7 3) 224 4) 46.9cm² and 34.5cm 5) 28.3

Surds Revision

Simplify fully

1) $\sqrt{50}$

2) $\sqrt{98}$

3) $\sqrt{45}$

4) $3\sqrt{8}$

5) $6\sqrt{20}$

6) $\sqrt{2} \times \sqrt{6}$

7) $\sqrt{3} \times \sqrt{15}$

8) $3\sqrt{2} \times 4\sqrt{6}$

9) $(\sqrt{5})^3$

10) $\frac{\sqrt{72}}{\sqrt{8}}$

11) $\frac{6\sqrt{10}}{2\sqrt{2}}$

12) $\frac{\sqrt{100}}{\sqrt{2}}$

13) $(2\sqrt{3})^4$

14) $(2\sqrt{2})^5$

15) $\frac{\sqrt{3} \times 4\sqrt{15}}{\sqrt{5}}$

16) $\sqrt{12} + \sqrt{48}$

17) $\sqrt{200} - \sqrt{72}$

18) $5\sqrt{8} - \sqrt{50}$

Rationalise the denominator for:

19) $\frac{6}{\sqrt{2}}$

20) $\frac{1}{5\sqrt{3}}$

21) $\frac{4}{\sqrt{6}}$

Answers

1) $5\sqrt{2}$ 2) $7\sqrt{2}$ 3) $3\sqrt{5}$ 4) $6\sqrt{2}$ 5) $12\sqrt{5}$ 6) $2\sqrt{3}$ 7) $3\sqrt{5}$ 8) $24\sqrt{3}$

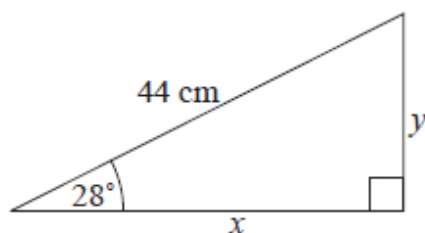
9) $5\sqrt{5}$ 10) 3 11) $3\sqrt{5}$ 12) $5\sqrt{2}$ 13) 144 14) $128\sqrt{2}$ 15) 12 16) $6\sqrt{3}$

17) $4\sqrt{2}$ 18) $5\sqrt{2}$ 19) $3\sqrt{2}$ 20) $\frac{\sqrt{3}}{15}$ 21) $\frac{2\sqrt{6}}{3}$

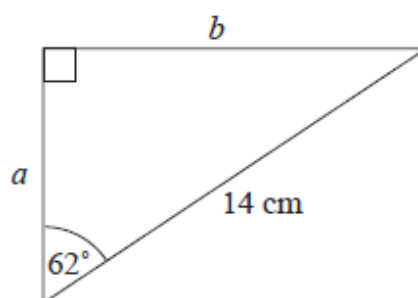
Trigonometry Revision

1. Calculate the lengths of the sides marked with letters in each of the following diagrams:

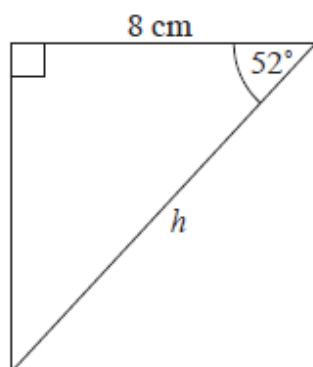
(a)



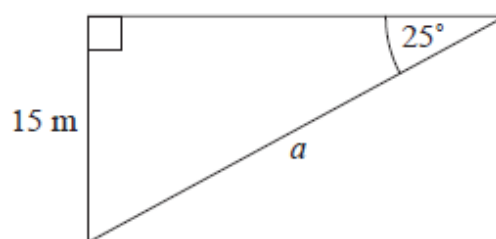
(b)



(c)



(d)



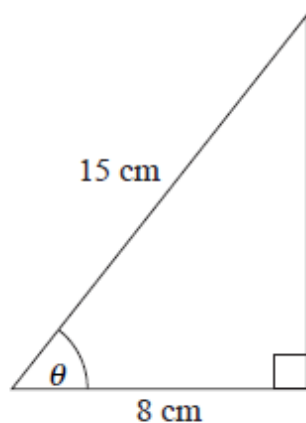
2. A rectangle has sides of length 18 cm and x cm. The acute angle between the diagonals of the rectangle is 40° . Determine x .

3. A pole of length 6 m leans against a vertical wall. The angle between the pole and the horizontal is 70° . Calculate the height of the top of the pole.

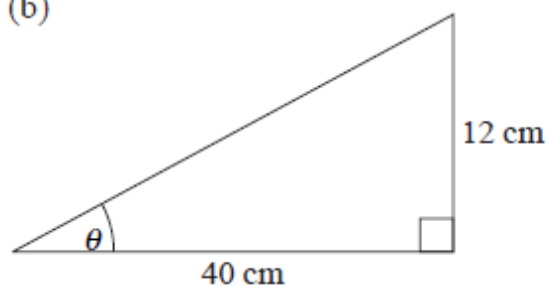
4.

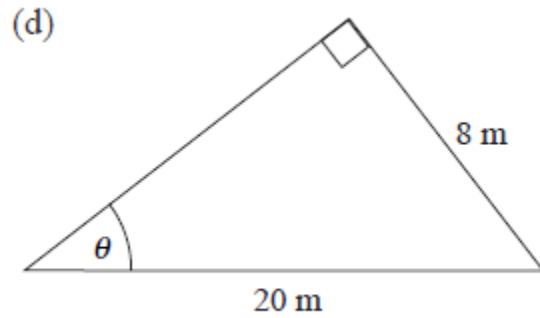
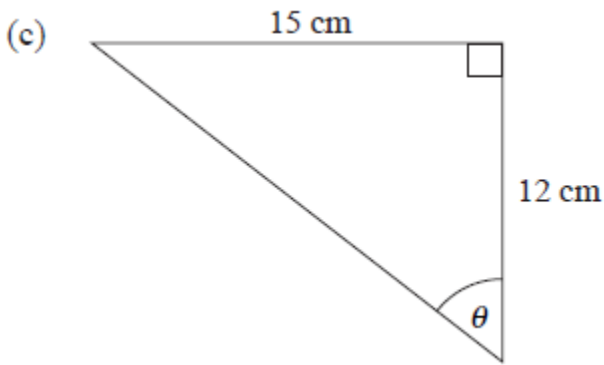
Calculate the size of the angle θ , marked in each triangle. Also calculate the length of the unknown side of each triangle. Give your answers to 3 significant figures.

(a)

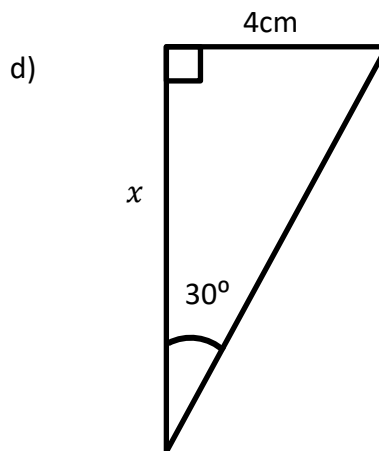
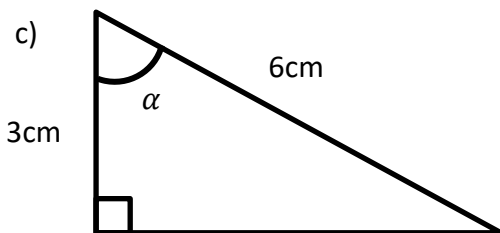
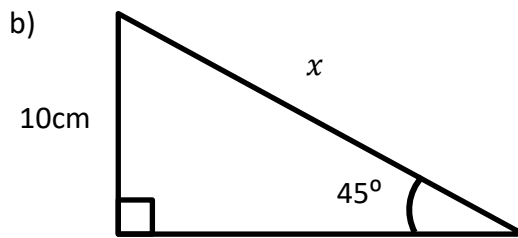
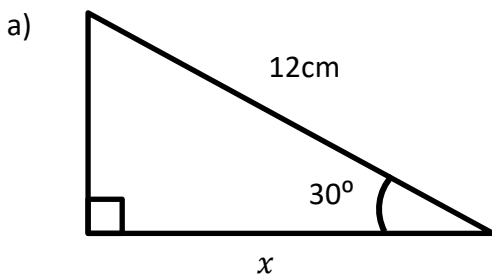


(b)





5. A ship sails on a bearing of 130° for 16km. How far South and East has it sailed?
6. I walk 4km North and 6km West. How far and on what bearing should I walk back home?
7. It is 1.6m from the floor to Mia's eyes. She looks up to the top of a tower, standing 20m away from the base of the tower and the angle of elevation from her eyes is 39° . How tall is the tower?
8. Find the missing angles or lengths indicated in the diagrams below (non-calc):



Trig Answers

1a) $x=38.8$ $y=20.7$ b) $a=6.57$ $b=12.4$ c) $h=13.0$ d) $a=35.5$ 2) 6.55 or 49.5 3) 5.64m
 4a) 57.8 b) 16.7 c) 51.3 d) 23.6 5) 10.3 south, 12.3 east 6) 7.21km on bearing of 124
 7) 14.2m 8a) $6\sqrt{3}$ b) $10\sqrt{2}$ c) 60 d) $4\sqrt{3}$