

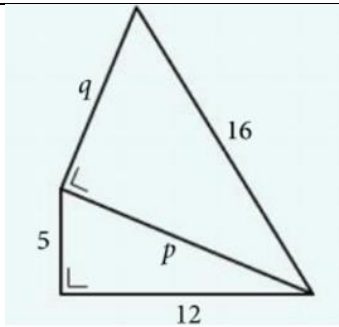
Q1.

(Chap 17 Pg 516)

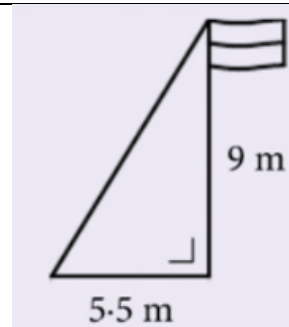
a) The diagram below shows two right-angled triangles.

Find: (i) the value of  $p$  and (ii) the value of  $q$  in surd form.

Ans:  $p = 13$ ,  $q = \sqrt{87}$



b) A wire is tied from the horizontal ground to the top of a vertical flagpole to secure it. The flagpole is 9m tall and it is to be anchored 5.5m away from its base. How long must the wire be to do this? Give your answer correct to the nearest cm. Ans: 1055cm

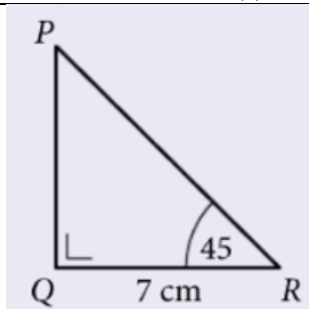


Q2.

(Chap 17 Pg 518/519)

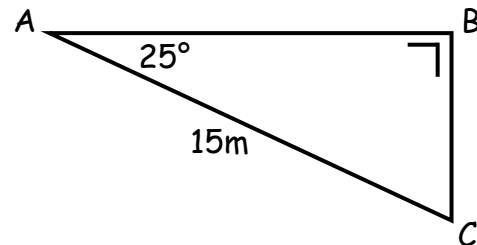
a) i) Looking at the diagram below, find  $|PQ|$ .  
ii) Find  $|PR|$  and give your answer in surd form.

Ans: (i) 7cm (ii)  $7\sqrt{2}$  cm



b) Find  $|AB|$  in the diagram below and give your answer correct to two decimal places.

Ans: 13.59m

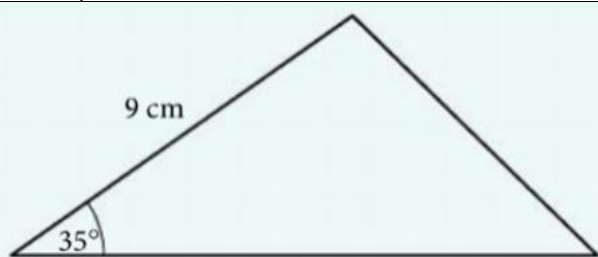


Q3.

(Chap 17 Pg 518/519)

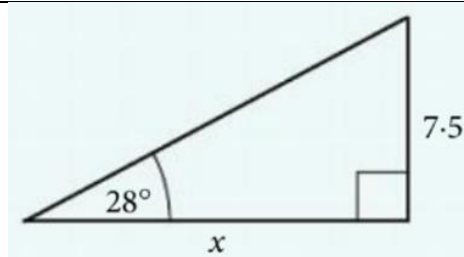
a) Find the vertical height of the triangle shown below. Give your answer correct to 1 decimal place.

Ans: 5.2cm



b) Find the value of  $x$  in the diagram below. Give your answer correct to one decimal place.

Ans:  $x = 14.1$

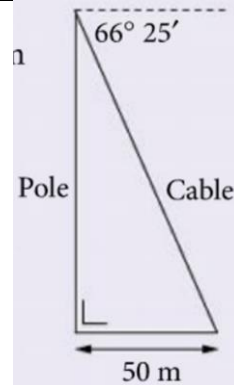
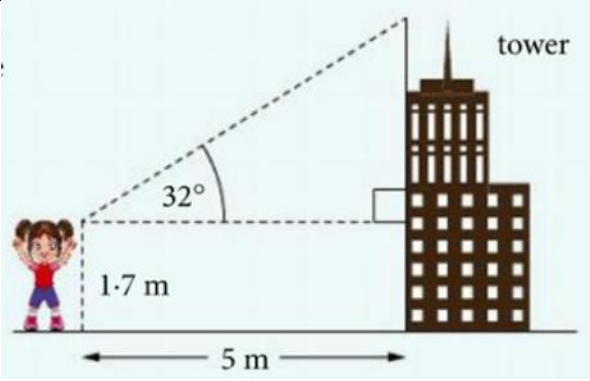


Q4.

(Chap 17 Pg 524/525)

a) i) Deirdre wants to measure the height of a vertical tower. Using the measurements shown below, calculate the vertical height of the tower. Give your answer correct to the nearest cm.  
 Ans: 482cm  
 ii) Name the instrument she used to measure the angle of elevation shown.

b) A vertical pole stands on level ground. A cable joins the top of the pole to a point on the ground, which is 50m from the base of the pole. Using the diagram:  
 i) Find the height of the pole correct to the nearest metre.  
 Ans: 115m  
 ii) Find the length of the cable correct to two decimal places.  
 Ans: 125m

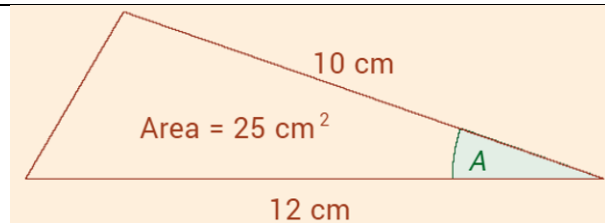
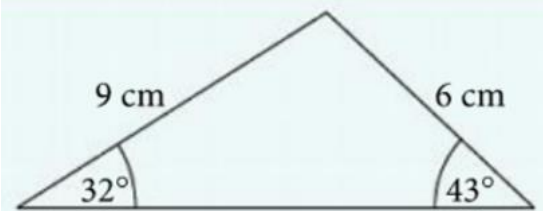


Q5.

(Chap 17 Pg 529)

a) Find the area of the triangle shown on the right. Give your answer correct to the nearest whole number.  
 Ans: 26cm<sup>2</sup>

b) Find the measure of the angle A. Give your answer to the nearest degree. Ans: 25°

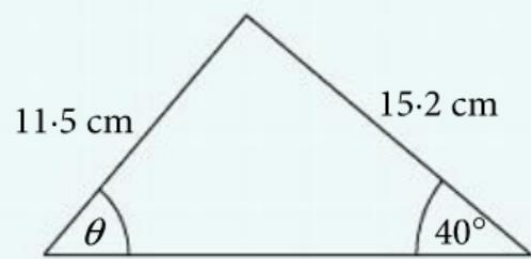
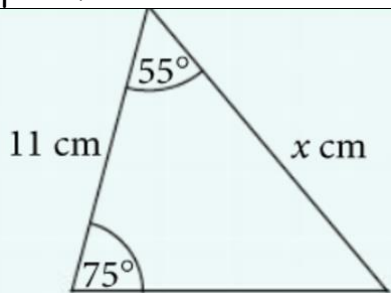


Q6.

(Chap 17 Pg 535)

a) Find the value of x in the triangle below and give your answer correct to one decimal place.  
 Ans: 13.9cm

b) Find the value of the acute angle  $\theta$  in the diagram below. Give your answer in degrees and minutes and to the nearest minute. Ans: 58°10'



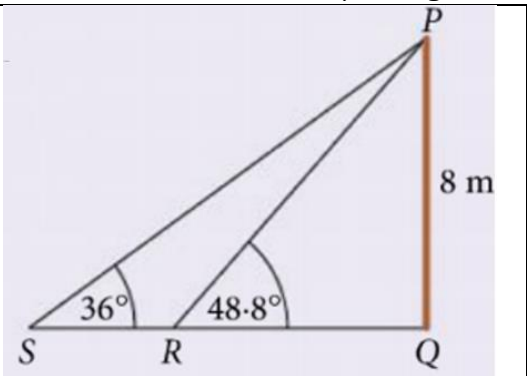
Q7.

(Chap 17 Pg 535)

The diagram on the right shows a vertical telephone pole [PQ] of height 8m. Two wires [PR] and [PS] are connected from the top of the pole to horizontal ground. Find:

i) the length of the wire |PR|, correct to one decimal place. Ans: 10.6m

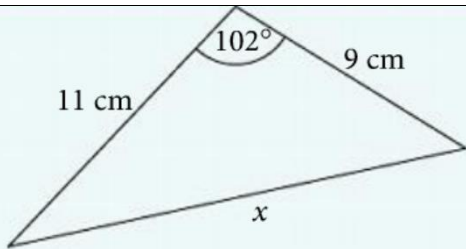
ii) the distance between the two points S and R, correct to the nearest metre. Ans: 4m



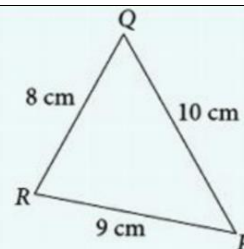
Q8.

(Chap 17 Pg 537)

a) Find the value of x. Give your answer correct to one decimal place. Ans: 15.6cm



b) The diagram shows triangle PQR. Find  $\angle PQR$ . Give your answer correct to two decimal places. Ans: 58.75°

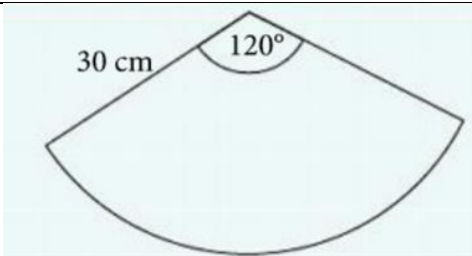


Q9.

(Chap 17 Pg 540/541)

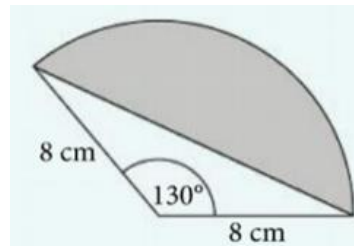
a) Find (i) the area and (ii) the perimeter of the sector shown below, giving your answers correct to one decimal places.

Ans: (i) 942.5cm<sup>2</sup> (ii) 122.8cm



b) A sector of a circle of angle 225°, has an arc length of 7.5π cm. Find the area of this sector, in terms of π. Ans: 22.5π cm<sup>2</sup>

c) Find the area of the shaded region below and give your answer correct to the nearest whole number. Ans: 48cm<sup>2</sup>



Q10.

(Chap 17 Pg 533)

Write the answers to the following in surd form, without using your calculator:

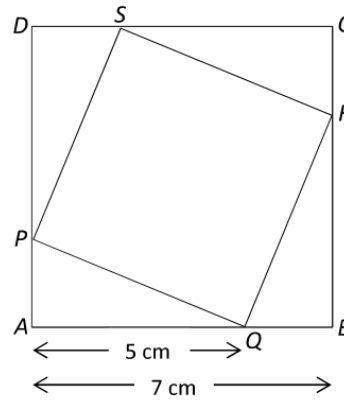
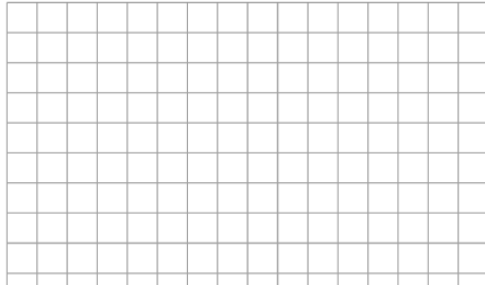
i)  $\cos 135^\circ$  ii)  $\tan 150^\circ$  iii)  $\sin 330^\circ$  iv)  $\tan 225^\circ$

Ans: (i)  $-\frac{1}{\sqrt{2}}$  (ii)  $-\frac{1}{\sqrt{3}}$  (iii)  $-\frac{1}{2}$  (iv) 1

**Past Exam Questions:**

**Q11. 2018 Paper 2 Q5**

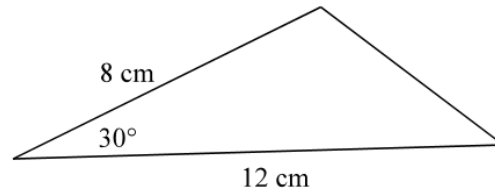
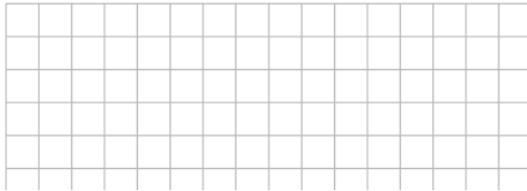
The square  $ABCD$  has sides of length 7 cm. The vertices of the square  $PQRS$  lie on the perimeter of  $ABCD$ , as shown in the diagram, with  $|AQ| = 5$  cm. Find the area of the square  $PQRS$ .



**Ans:  $29\text{cm}^2$**

**Q12. 2016 Paper 2 Q2**

(a) Find the area of the given triangle.

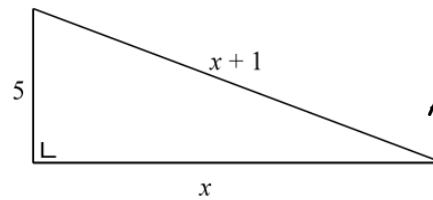
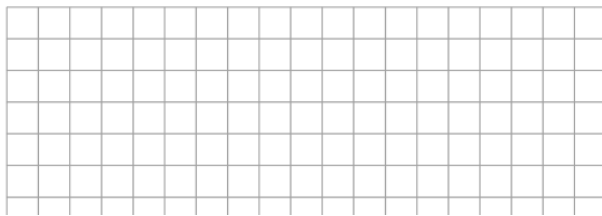


(b) A triangle has sides of length 3 cm, 5 cm, and 7 cm. Find the size of the largest angle in the triangle.

**Ans: (a)  $24\text{cm}^2$  (b)  $120^\circ$**

**Q13. 2016 Paper 2 Q6**

The lengths of the sides of a right-angled triangle are 5,  $x$ , and  $x + 1$  as shown. Use the Theorem of Pythagoras to find the value of  $x$ .

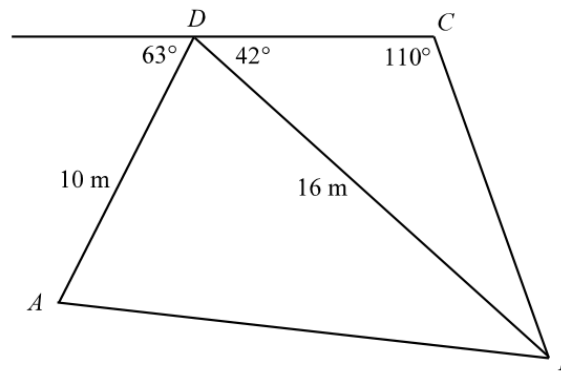
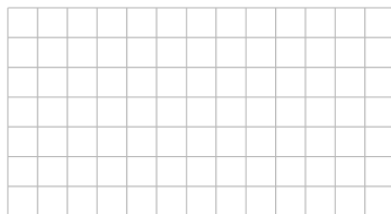


**Ans:  $x = 12$**

**Q14. 2015 Paper 2 Q5**

The diagram shows the triangles  $BCD$  and  $ABD$ , with some measurements given.

(a) (i) Find  $|BC|$ , correct to two decimal places.



(ii) Find the area of the triangle  $BCD$ , correct to two decimal places.

(b) Find  $|AB|$ , correct to two decimal places.

**Ans: (a)(i)  $11.39\text{m}$  (ii)  $42.78\text{m}^2$  (b)  $16.53\text{m}$**