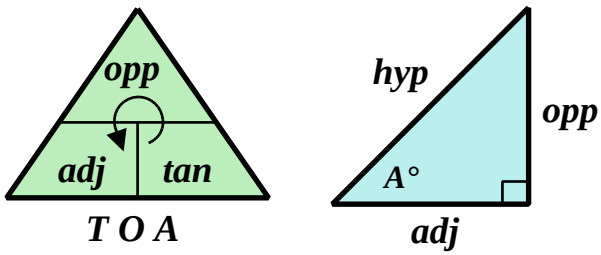
Lesson 3

Trigonometry : Year 9

Calculator needed !

3.1 tan

SOH CAH **TOA**



$$\tan A^\circ = \frac{opp}{adj} \qquad \text{which gives} \qquad A^\circ = \arctan\left(\frac{opp}{adj}\right)$$

$$opp = adj \times \tan A^\circ$$

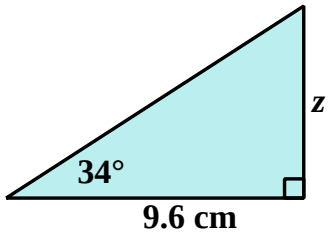
$$adj = \frac{opp}{\tan A^\circ}$$

Theorem of Pythagoras.

$$hyp^2 = opp^2 + adj^2$$

3.2 Exercise

Question 1



(i) Label the triangle sides *hyp*, *opp*, and *adj*.

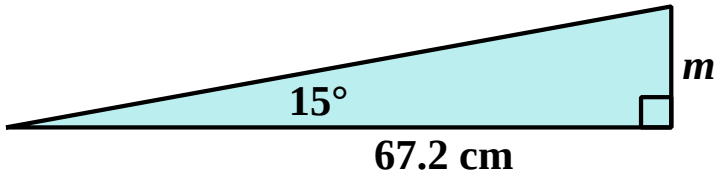
(ii) Calculate *z* using the formula,

$$opp = adj \times \tan A^\circ$$

$$z = 9.6 \times \tan 34^\circ$$

$$z =$$

Question 2



(i) Label the triangle sides *hyp*, *opp*, and *adj*.

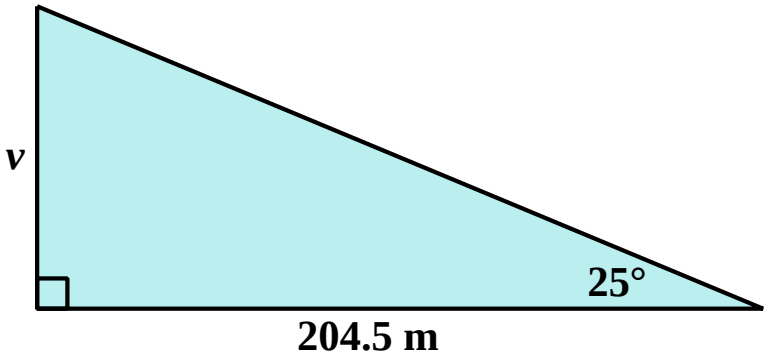
(ii) Calculate *m* using the formula,

$$opp = adj \times tan\, A°$$

$$m = \_\_\_\_\_ \times tan\, 15°$$

$$m =$$

Question 3

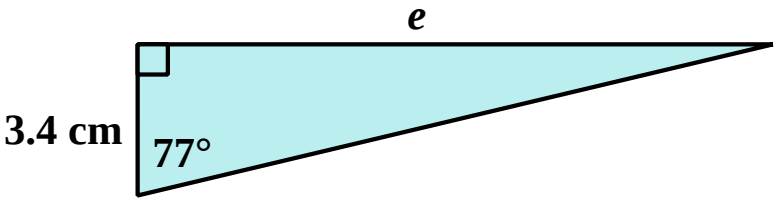


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate *v* using the formula,

$$opp = adj \times tan\, A°$$

Question 4

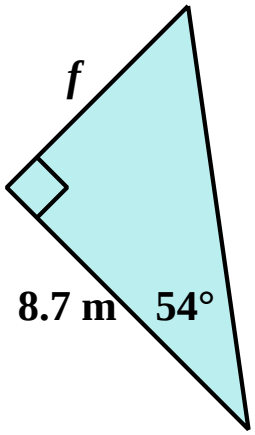


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate *e* using the formula,

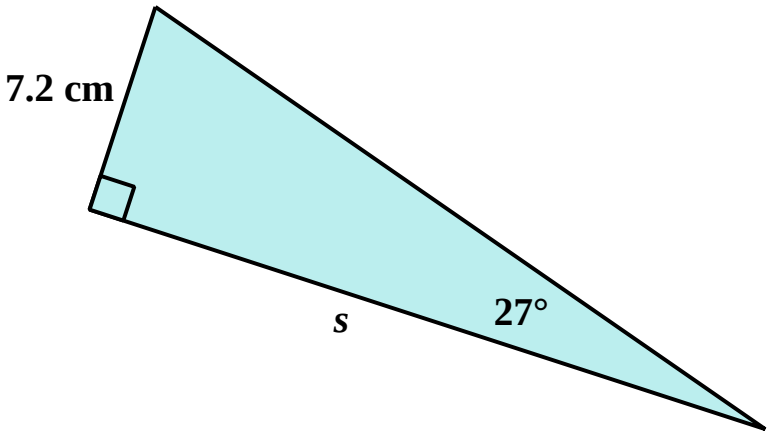
$$opp = adj \times tan\, A°$$

Question 5



Calculate the length of *f*.

Question 6



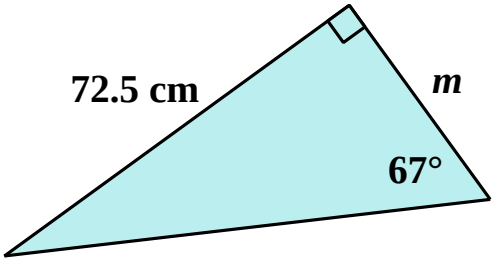
(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate *s* using the formula,

$$adj = \frac{opp}{\tan A^\circ}$$

$$s = \frac{7.2}{\tan 27}$$

Question 7

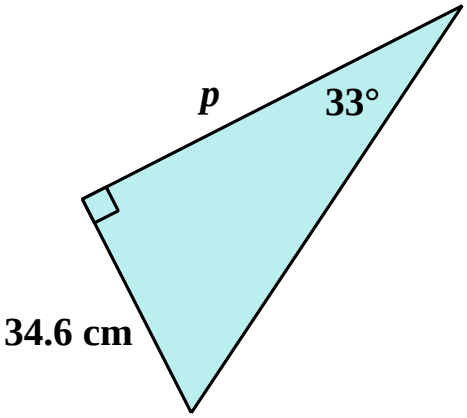


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate *m* using the formula,

$$adj = \frac{opp}{tan\, A°}$$

Question 8

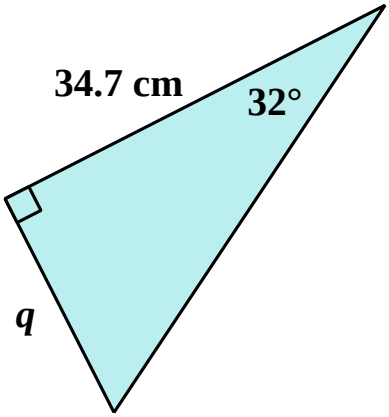


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate *p* using the correct formula,

$$EITHER \quad opp = adj \times tan\, A° \qquad OR \quad adj = \frac{opp}{tan\, A°}$$

Question 9

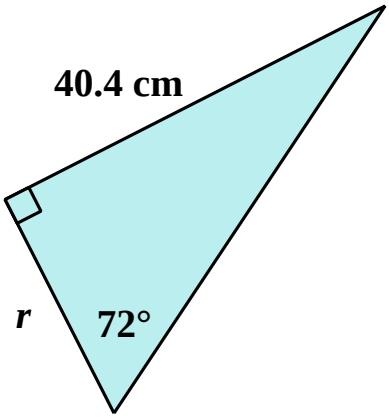


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate q using the correct formula,

$$EITHER \quad opp = adj \times \tan A° \qquad OR \quad adj = \frac{opp}{\tan A°}$$

Question 10

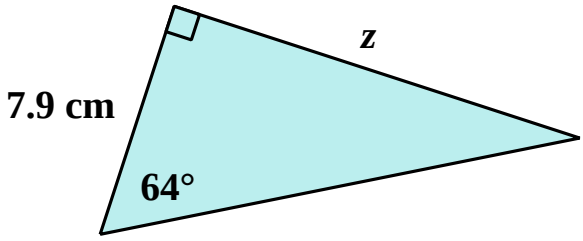


(i) Label the triangle sides *hyp*, *opp*, and *adj*.

(ii) Calculate r using the correct formula,

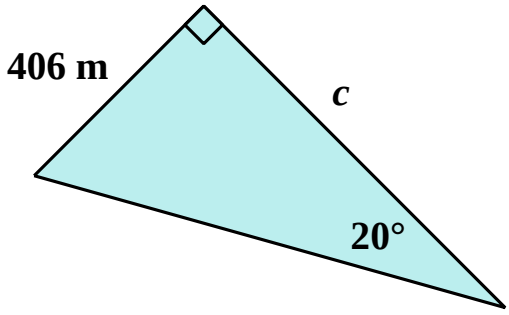
$$EITHER \quad opp = adj \times \tan A° \qquad OR \quad adj = \frac{opp}{\tan A°}$$

Question 11



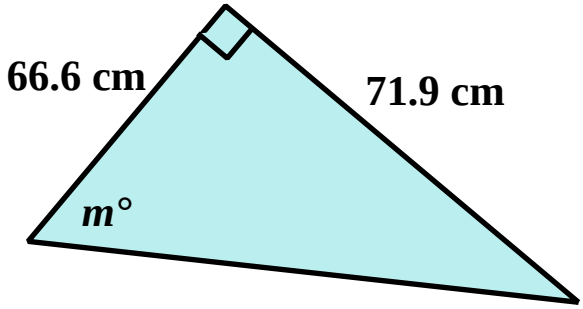
Calculate *z*.

Question 12



Calculate *c*.

Question 13

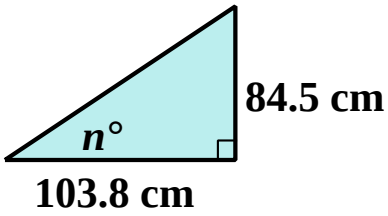


(i) Label the triangle's sides, *hyp*, *opp* and *adj*.

(ii) Calculate angle *m* by using the formula;

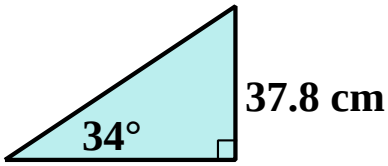
$$m = \arctan\left(\frac{opp}{adj}\right)$$

Question 14



Calculate angle *n*.

Question 15



Find the perimeter of the triangle.

Question 16

This question is about plotting a graph of the *sin* function.

$A°$	0°	5°	10°	15°	20°	25°	30°	35°	40°
sin $A°$									

$A°$	45°	50°	55°	60°	65°	70°	75°	80°	85°
s*in* $A°$