

SIN & COSINE RULE TEST

Instructions: Choose the correct answer (A, B, C or D). Round answers to 3 significant figures.

SECTION A – SINE RULE

1. In triangle ABC, $A = 30^\circ$, $B = 45^\circ$, and $a = 6$ cm. Find b .

- A. 7.35 cm
 - B. 8.49 cm
 - C. 6.00 cm
 - D. 9.12 cm
-

2. In triangle ABC, $A = 50^\circ$, $C = 60^\circ$, and $c = 10$ cm. Find a .

- A. 8.79 cm
 - B. 9.54 cm
 - C. 7.66 cm
 - D. 10.6 cm
-

3. In triangle ABC, $a = 8$ cm, $b = 12$ cm, and $A = 35^\circ$. Find angle B .

- A. 59.1°
 - B. 62.0°
 - C. 68.2°
 - D. 52.4°
-

4. In triangle ABC, $B = 40^\circ$, $C = 75^\circ$, and $b = 9$ cm. Find c .

- A. 12.6 cm
 - B. 13.0 cm
 - C. 14.2 cm
 - D. 11.8 cm
-

5. In triangle ABC, $a = 5$ cm, $c = 7$ cm, and $C = 80^\circ$. Find angle A.

- A. 44.7°
 - B. 29.6°
 - C. 35.8°
 - D. 38.4°
-

6. In triangle ABC, $A = 70^\circ$, $B = 45^\circ$, and $a = 15$ cm. Find b .

- A. 10.9 cm
 - B. 12.3 cm
 - C. 13.7 cm
 - D. 14.8 cm
-

7. In triangle ABC, $b = 14$ cm, $c = 10$ cm, and $C = 30^\circ$. Find B.

- A. 44.4°
- B. 41.8°
- C. 39.5°
- D. 36.2°

8. In triangle ABC, $A = 25^\circ$, $B = 65^\circ$, and $a = 4$ cm. Find c .

- A. 8.52 cm
 - B. 7.46 cm
 - C. 9.46 cm
 - D. 6.88 cm
-

9. In triangle ABC, $a = 9$ cm, $b = 11$ cm, and $B = 70^\circ$. Find A .

- A. 51.7°
 - B. 50.3°
 - C. 48.9°
 - D. 57.8°
-

10. In triangle ABC, $C = 55^\circ$, $A = 65^\circ$, and $c = 12$ cm. Find a .

- A. 13.0 cm
 - B. 11.4 cm
 - C. 14.1 cm
 - D. 10.8 cm
-

SECTION B – COSINE RULE

11. $a = 7$ cm, $b = 9$ cm, $C = 60^\circ$. Find c .

- A. 8.19 cm
 - B. 7.94 cm
 - C. 8.72 cm
 - D. 9.11 cm
-

12. $a = 5$ cm, $b = 6$ cm, $C = 120^\circ$. Find c .

- A. 9.54 cm
 - B. 8.72 cm
 - C. 7.81 cm
 - D. 10.0 cm
-

13. $a = 10$ cm, $b = 13$ cm, $c = 15$ cm. Find angle C .

- A. 70.5°
 - B. 72.3°
 - C. 68.4°
 - D. 75.1°
-

14. $b = 8$ cm, $c = 11$ cm, $A = 50^\circ$. Find a .

- A. 8.48 cm
 - B. 9.02 cm
 - C. 7.88 cm
 - D. 10.3 cm
-

15. $a = 6$ cm, $b = 10$ cm, $C = 90^\circ$. Find c .

- A. 11.7 cm
- B. 11.66 cm
- C. 12.0 cm
- D. 10.8 cm

16. $a = 9$ cm, $b = 12$ cm, $c = 15$ cm. Find C .

- A. 90°
 - B. 85.6°
 - C. 92.3°
 - D. 88.1°
-

17. $a = 4$ cm, $b = 7$ cm, $C = 45^\circ$. Find c .

- A. 5.12 cm
 - B. 5.04 cm
 - C. 6.18 cm
 - D. 4.89 cm
-

18. $a = 14$ cm, $b = 16$ cm, $C = 30^\circ$. Find c .

- A. 8.0 cm
 - B. 9.67 cm
 - C. 10.4 cm
 - D. 11.2 cm
-

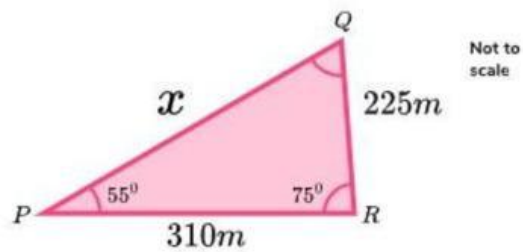
19. $a = 12$ cm, $c = 9$ cm, $B = 40^\circ$. Find b .

- A. 8.41 cm
- B. 9.03 cm
- C. 7.72 cm
- D. 10.2 cm

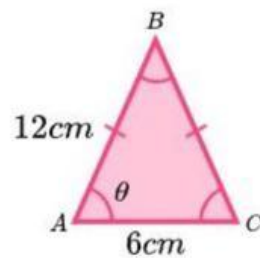
20. $a = 11$ cm, $b = 13$ cm, $C = 75^\circ$. Find c .

- A. 14.7 cm
- B. 13.9 cm
- C. 12.8 cm
- D. 15.1 cm

Find the length of PQ for triangle PQR, correct to 3 significant figures.

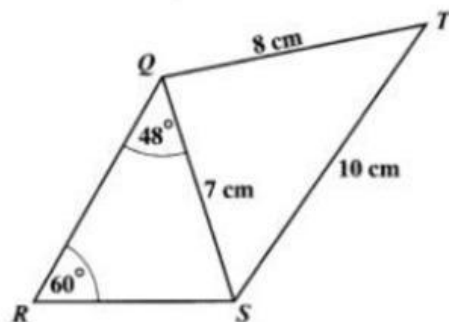


Find the size of the angle θ for the isosceles triangle ABC. Write your answer to 2 significant figures.



Not drawn
to scale

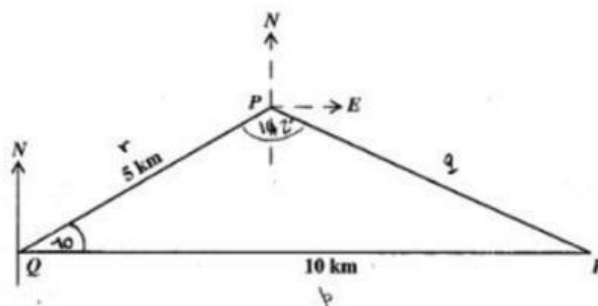
- (a) The diagram below, **not drawn to scale**, shows a quadrilateral $QRST$ in which $QS = 7$ cm, $ST = 10$ cm, $QT = 8$ cm, $\angle SRQ = 60^\circ$ and $\angle RQS = 48^\circ$.



Calculate

- (i) the length of RS (3 marks)
- (ii) the measure of $\angle QTS$. (3 marks)

(b)



Three towns, P , Q and R are such that the bearing of P from Q is 070° . R is 10 km due east of Q and $PQ = 5$ km.

- (i) Calculate, correct to one decimal place, the distance PR .