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°, B = 45°, and a = 6 cm. Find b.
A. 7.35 cm
B. 8.49 cm
C. 6.00 cm
D. 9.12 cm

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2. In triangle ABC, A = 50°, C = 60°, and c = 10 cm. Find a.
A. 8.79 cm
B. 9.54 cm
C. 7.66 cm
D. 10.6 cm

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3. In triangle ABC, a = 8 cm, b = 12 cm, and A = 35°. Find angle B.
A. 59.1°
B. 62.0°
C. 68.2°
D. 52.4°

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4. In triangle ABC, B = 40°, C = 75°, and b = 9 cm. Find c.

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

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5. In triangle ABC, a = 5 cm, c = 7 cm, and C = 80°. Find angle A.

A. 44.7°
B. 29.6°
C. 35.8°
D. 38.4°

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6. In triangle ABC, A = 70°, B = 45°, and a = 15 cm. Find b.

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

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7. In triangle ABC, b = 14 cm, c = 10 cm, and C = 30°. Find B.

A. 44.4°
B. 41.8°
C. 39.5°
D. 36.2°

8. In triangle ABC, A = 25°, B = 65°, and a = 4 cm. Find c.

A. 8.52 cm

B. 7.46 cm

C. 9.46 cm

D. 6.88 cm

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9. In triangle ABC, a = 9 cm, b = 11 cm, and B = 70°. Find A.

A. 51.7°

B. 50.3°

C. 48.9°

D. 57.8°

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10. In triangle ABC, C = 55°, A = 65°, 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°. Find c.

A. 8.19 cm

B. 7.94 cm

C. 8.72 cm

D. 9.11 cm

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12. a = 5 cm, b = 6 cm, C = 120°. Find c.
A. 9.54 cm
B. 8.72 cm
C. 7.81 cm
D. 10.0 cm

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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°

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14. b = 8 cm, c = 11 cm, A = 50°. Find a.
A. 8.48 cm
B. 9.02 cm
C. 7.88 cm
D. 10.3 cm

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15. a = 6 cm, b = 10 cm, C = 90°. 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°

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17. a = 4 cm, b = 7 cm, C = 45°. Find c.

A. 5.12 cm

B. 5.04 cm

C. 6.18 cm

D. 4.89 cm

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18. a = 14 cm, b = 16 cm, C = 30°. Find c.

A. 8.0 cm

B. 9.67 cm

C. 10.4 cm

D. 11.2 cm

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19. a = 12 cm, c = 9 cm, B = 40°. 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°. Find c.

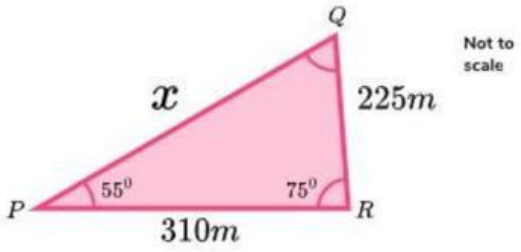
A. 14.7 cm

B. 13.9 cm

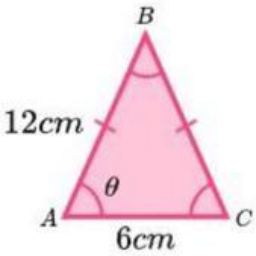
C. 12.8 cm

D. 15.1 cm

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

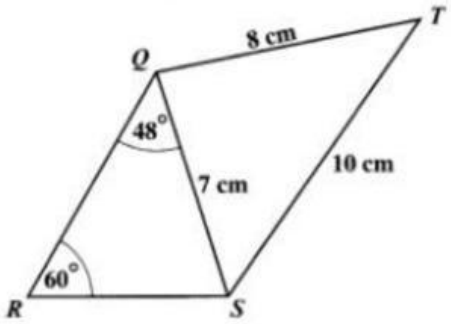


Find the size of the angle θ for the isosceles triangle ABC. Write your answer to 2 significant figures.



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, $\angle SRQ = 60°$ and $\angle RQS = 48°$.

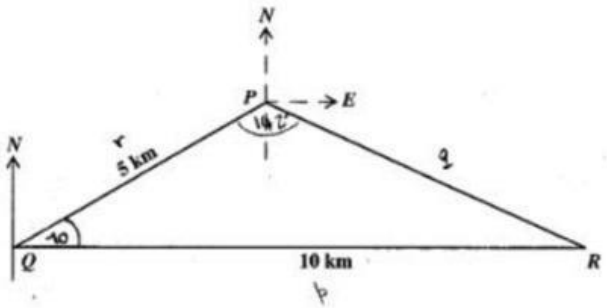


Calculate

(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.