

A2.A.73: Law of Cosines 1: Solve for an unknown side or angle, using the Law of Sines or the Law of Cosines

1 In $\triangle FGH$, $f = 6$, $g = 9$, and $m\angle H = 57^\circ$. Which statement can be used to determine the numerical value of h ?

1) $h^2 = 6^2 + 9^2 - 2(9)(h)\cos 57^\circ$

3) $6^2 = 9^2 + h^2 - 2(9)(h)\cos 57^\circ$

2) $h^2 = 6^2 + 9^2 - 2(6)(9)\cos 57^\circ$

4) $9^2 = 6^2 + h^2 - 2(6)(h)\cos 57^\circ$

2 In $\triangle ABC$, if $a = 4$, $b = 3$, and $\cos C = -\frac{1}{2}$. What is the length of c ?

1) 7

3) $\sqrt{37}$

2) $\sqrt{13}$

4) $\sqrt{19}$

3 In $\triangle CAT$, $a = 4$, $c = 5$, and $\cos T = \frac{1}{8}$. What is the length of t ?

4 In $\triangle ABC$, $a = 8$, $b = 9$, and $\cos C = \frac{2}{3}$. Find c .

5 In $\triangle ABC$, $a = 2$, $c = 6$, and $\cos B = \frac{1}{6}$. Find b .

6 In $\triangle ABC$, $\cos C = -0.2$, $a = 8$, and $b = 10$. Find the length of side c .

7 In triangle ABC , $a = 2$, $b = 4$, and $m\angle C = 120^\circ$. What is the length of side c ?

1) $\sqrt{7}$

3) 28

2) $2\sqrt{7}$

4) $4\sqrt{7}$

- 2

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Answer Section

- 1 ANS: 2 REF: 011501a2
- 2 ANS: 3 REF: 089827siii
- 3 ANS:
6

REF: 089610siii
- 4 ANS:
7

REF: 019711siii
- 5 ANS:
6

REF: 019913siii
- 6 ANS:
14

REF: 069910siii
- 7 ANS: 2 REF: 088429siii
- 8 ANS: 1 REF: 018523siii
- 9 ANS: 2 REF: 018622siii
- 10 ANS: 3 REF: 089928siii
- 11 ANS: 4 REF: 080025siii
- 12 ANS:
7

REF: 068615siii
- 13 ANS:
7

REF: 018711siii
- 14 ANS:
7

REF: 069016siii
- 15 ANS:
14

REF: 060112siii