A2.A.73: Law of Cosines 2: Solve for an unknown side or angle, using the Law of Sines or the Law of Cosines

1 If, in ΔABC, $a = 5$, $b = 6$, and $c = 8$, then $\cos A$ is

1) $-\frac{1}{20}$
2) $\frac{11}{32}$
3) $\frac{25}{32}$
4) $\frac{53}{80}$

2 In triangle ABC, if $a = 10$, $b = 7$, and $c = 8$, then the value of $\cos C$ is

1) $\frac{64}{9}$
2) $\frac{13}{112}$
3) $\frac{23}{32}$
4) $\frac{17}{28}$

3 In ΔABC, if $a = 4$, $b = 3$, and $c = 3$, then the value of $\cos A$ is

1) $\frac{2}{3}$
2) $\frac{1}{9}$
3) $-\frac{1}{9}$
4) $-\frac{2}{3}$

4 In triangle ABC, $a = 2$, $b = 3$, and $c = 4$. What is the value of $\cos C$?

1) $-\frac{1}{4}$
2) $\frac{7}{8}$
3) $-\frac{1}{2}$
4) 16

5 In ΔABC, $a = 5$, $b = 4$, and $c = 2$. What is the value of $\cos A$?

1) $\frac{5}{16}$
2) $-\frac{5}{16}$
3) $\frac{25}{4}$
4) $-\frac{25}{4}$

6 In ΔABC, if $a = 8$, $b = 5$, and $c = 9$, then $\cos A$ is

1) $\frac{7}{15}$
2) $-\frac{7}{15}$
3) $\frac{1}{4}$
4) $-\frac{1}{4}$

7 In ΔABC, if $a = 6$, $b = 4$, and $c = 9$. The value of $\cos C$ is

1) $\frac{61}{72}$
2) $-\frac{29}{48}$
3) $\frac{2}{3}$
4) $\frac{4}{9}$

8 In ΔABC, if $a = 8$, $b = 2$, and $c = 7$. What is the value of $\cos C$?

1) $-\frac{19}{32}$
2) $-\frac{11}{28}$
3) $\frac{109}{112}$
4) $\frac{19}{32}$

9 In ΔABC, $a = 6$, $b = 7$, and $c = 8$. What is $\cos A$ in simplest fractional form?

1) $\frac{3}{16}$
2) $\frac{11}{16}$
3) $\frac{77}{96}$
4) $\frac{51}{112}$

10 The sides of a triangle measure 6, 7, and 9. What is the cosine of the largest angle?

1) $-\frac{4}{81}$
2) 81
3) $\frac{4}{84}$
4) $-\frac{1}{81}$

11 In ΔABC, $a = 3$, $b = 5$, and $c = 7$. What is $m\angle C$?

1) 22
2) 38
3) 60
4) 120

12 In triangle ABC, $a = 5$, $b = 7$, and $c = 8$. The measure of $\angle B$ is

1) 30°
2) 60°
3) 120°
4) 150°

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Answer Section

1 ANS: 3 REF: 068123siii
2 ANS: 4 REF: 068431siii
3 ANS: 2 REF: 088633siii
4 ANS: 1 REF: 088728siii
5 ANS: 2 REF: 088930siii
6 ANS: 1 REF: 089430siii
7 ANS: 2 REF: 069632siii
8 ANS: 4 REF: 069828siii
9 ANS: 2 REF: 080133siii
10 ANS: 3 REF: 069526siii
11 ANS: 4

$7^2 = 3^2 + 5^2 - 2(3)(5)\cos A$

$49 = 34 - 30\cos A$

$15 = -30\cos A$

$-\frac{1}{2} = \cos A$

$120 = A$

REF: 081017a2
12 ANS: 2 REF: 068723siii