

**A2.A.73: Law of Cosines 3: Solve for an unknown side or angle, using the Law of Sines or the Law of Cosines**

- 1 If, in  $\triangle ABC$ ,  $a = 5$ ,  $b = 6$ , and  $c = 8$ , then  $\cos A$  is
- 2 In triangle  $ABC$ , if  $a = 10$ ,  $b = 7$ , and  $c = 8$ , then the value of  $\cos C$  is
- 3 In  $\triangle ABC$ , if  $a = 4$ ,  $b = 3$ , and  $c = 3$ , then the value of  $\cos A$  is
- 4 In triangle  $ABC$ ,  $a = 2$ ,  $b = 3$ , and  $c = 4$ . What is the value of  $\cos C$ ?
- 5 In  $\triangle ABC$ ,  $a = 5$ ,  $b = 4$ , and  $c = 2$ . What is the value of  $\cos A$ ?
- 6 In  $\triangle ABC$ , if  $a = 8$ ,  $b = 5$ , and  $c = 9$ , then  $\cos A$  is
- 7 In  $\triangle ABC$ , if  $a = 6$ ,  $b = 4$ , and  $c = 9$ . The value of  $\cos C$  is
- 8 In  $\triangle ABC$ , if  $a = 8$ ,  $b = 2$ , and  $c = 7$ . What is the value of  $\cos C$ ?
- 9 In  $\triangle ABC$ ,  $a = 6$ ,  $b = 7$ , and  $c = 8$ . What is  $\cos A$  in simplest fractional form?
- 10 The sides of a triangle measure 6, 7, and 9. What is the cosine of the largest angle?
- 11 In  $\triangle ABC$ ,  $a = 3$ ,  $b = 5$ , and  $c = 7$ . What is  $m\angle C$ ?
- 12 In triangle  $ABC$ ,  $a = 5$ ,  $b = 7$ , and  $c = 8$ . The measure of  $\angle B$  is

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### Answer Section

1 ANS:

$$\frac{25}{32}$$

REF: 068123siii

2 ANS:

$$\frac{17}{28}$$

REF: 068431siii

3 ANS:

$$\frac{1}{9}$$

REF: 088633siii

4 ANS:

$$-\frac{1}{4}$$

REF: 088728siii

5 ANS:

$$-\frac{5}{16}$$

REF: 088930siii

6 ANS:

$$\frac{7}{15}$$

REF: 089430siii

7 ANS:

$$-\frac{29}{48}$$

REF: 069632siii

8 ANS:

$$\frac{19}{32}$$

REF: 069828siii

9 ANS:

$$\frac{11}{16}$$

REF: 080133siii

10 ANS:

$$\frac{4}{84}$$

REF: 069526siii

11 ANS:

$$120$$

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

$$49 = 34 - 30\cos A$$

$$15 = -30\cos A$$

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

$$120 = A$$

REF: 081017a2

12 ANS:

$$60^\circ$$

REF: 068723siii