



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Apply $c^2 = a^2 + b^2 - 2ab \cdot \cos C$. ✓ Find a side from two sides and the included angle (SAS).
 ✓ Find an angle from three sides (SSS). ✓ Relate it to the Pythagorean theorem.



Section A · Concept Check

• BEGINNER

$4 \times 1 = 4$

- 1 A triangle has $a=8$, $b=15$, $C=90^\circ$. Side c is:
☐ A. 17 ☐ B. 23 ☐ C. 13 ☐ D. $\sqrt{161}$
- 2 A triangle has $a=6$, $b=7$, $c=9$. $\cos C$ is about:
☐ A. 0.048 ☐ B. 0.5 ☐ C. 0.116 ☐ D. 1
- 3 Using that, angle C is about:
☐ A. 87.3° ☐ B. 60° ☐ C. 90° ☐ D. 45°
- 4 The Law of Cosines is used with:
☐ A. SAS or SSS ☐ B. AAA ☐ C. AA ☐ D. ASA



Section B · Problem Solving

• INTERMEDIATE

$2 + 3 \times 3 = 11$

- 5 Law of Cosines: $c^2 = a^2 + b^2 -$ _____
- 6 When $C = 90^\circ$, $\cos C = 0$, so it reduces to the _____ theorem.
- 7 A triangle has $a=8$, $b=15$, $C=90^\circ$. Find c .

- 8 A triangle has $a=5$, $b=9$, $C=45^\circ$. Find c^2 .

- 9 A triangle has sides $a=6$, $b=7$, $c=9$. Find $\cos C$.



Section C · Challenge

• CHALLENGE

5

- 10 Using the previous result, find angle C .

Reflection — the most useful thing I learned: _____

A ___/4

B ___/11

C ___/5

Total ___/20

Teacher's Signature

Parent's Signature

ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-A 2-A 3-A 4-A | 5 $2ab \cdot \cos C$ 6 Pythagorean 7 = 17 (matches the Pythagorean theorem) 8
 = 106 - $63.64 \approx 42.36$ 9 = $4/84 \approx 0.048$ | 10 = $\arccos(0.048) \approx 87.3^\circ$