Name: _____ **Date:** _____ **ID: A**

$\sin=\frac{\text{opp}}{\text{hyp}}$ $\cos=\frac{\text{adj}}{\text{hyp}}$ $\tan=\frac{\text{opp}}{\text{adj}}$ $\frac{a}{\sin A}=\frac{b}{\sin B}=\frac{c}{\sin C}$ $a^2=b^2+c^2-2bc\cos A$ $\cos A=\frac{b^2+c^2-a^2}{2bc}$

WS - Right Angle Trigonometry

1. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 55° = \frac{b}{14}$ (b) $\cos P = \frac{2}{16}$ (c) $\tan 28° = \frac{19}{z}$

2. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 46° = \frac{11}{c}$ (b) $\cos 40° = \frac{q}{12}$ (c) $\tan X = \frac{2}{5}$

3. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 60° = \frac{b}{11}$ (b) $\cos P = \frac{3}{13}$ (c) $\tan 27° = \frac{6}{z}$

4. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 45° = \frac{b}{17}$ (b) $\cos P = \frac{6}{18}$ (c) $\tan 44° = \frac{17}{z}$

5. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 28° = \frac{b}{12}$ (b) $\cos P = \frac{9}{20}$ (c) $\tan 44° = \frac{7}{z}$

6. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 51° = \frac{b}{6}$ (b) $\cos P = \frac{3}{15}$ (c) $\tan 64° = \frac{20}{z}$

7. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 60° = \frac{5}{c}$ (b) $\cos 50° = \frac{q}{17}$ (c) $\tan X = \frac{2}{17}$

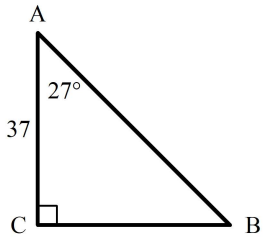
8. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 39° = \frac{b}{6}$ (b) $\cos P = \frac{12}{16}$ (c) $\tan 43° = \frac{19}{z}$

9. Solve each equation. Round your answers to one decimal place.
   (a) $\sin 41° = \frac{b}{16}$ (b) $\cos P = \frac{8}{20}$ (c) $\tan 41° = \frac{20}{z}$

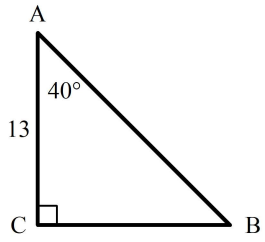
10. Solve each equation. Round your answers to one decimal place.
    (a) $\sin 54° = \frac{b}{11}$ (b) $\cos P = \frac{3}{7}$ (c) $\tan 35° = \frac{7}{z}$

COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10
Conventions & Terminology	No level assigned based on content of this page	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors	
Expression & Organization			Significant Improvements Required		Few Improvements Required		No Improvements Required	

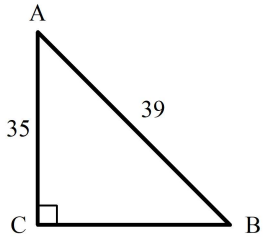
11. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



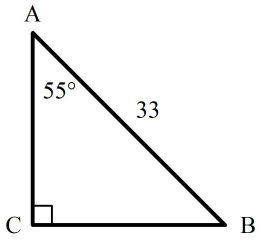
12. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



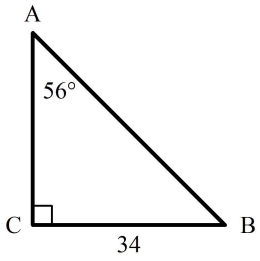
13. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



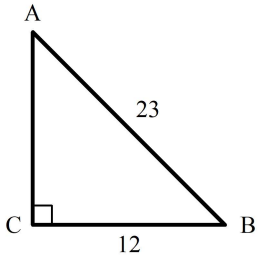
14. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



15. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



16. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.



COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10
Conventions & Terminology	No level assigned based on content of this page	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors	
Expression & Organization			Significant Improvements Required		Few Improvements Required		No Improvements Required	

WS - Right Angle Trigonometry
Answer Section

1. ANS:

(a) $\sin 55° = \frac{b}{14}$

$14(\sin 55°) = b$

$14(0.8192) = b$

$b = 11.5$

(b) $\cos P = \frac{2}{16}$

$\cos P = 0.125$

$P = \cos^{-1}(0.125)$

$P = 82.8°$

(c) $\tan 28° = \frac{19}{z}$

$z \tan 28° = 19$

$z(0.5317) = 19$

$z = 35.7$

PTS: 1

2. ANS:

(a) $\sin 46° = \frac{11}{c}$

$c \sin 46° = 11$

$c(0.7193) = 11$

$c = 15.3$

(b) $\cos 40° = \frac{q}{12}$

$12(\cos 40°) = q$

$12(0.766) = q$

$q = 9.2$

(c) $\tan X = \frac{2}{5}$

$\tan X = 0.4$

$X = \tan^{-1}(0.4)$

$X = 21.8°$

PTS: 1

3. ANS:

(a) $\sin 60° = \frac{b}{11}$

$11(\sin 60°) = b$

$11(0.866) = b$

$b = 9.5$

(b) $\cos P = \frac{3}{13}$

$\cos P = 0.2308$

$P = \cos^{-1}(0.2308)$

$P = 76.7°$

(c) $\tan 27° = \frac{6}{z}$

$z \tan 27° = 6$

$z(0.5095) = 6$

$z = 11.8$

PTS: 1

4. ANS:

(a) $\sin 45° = \frac{b}{17}$

$17(\sin 45°) = b$

$17(0.7071) = b$

$b = 12$

(b) $\cos P = \frac{6}{18}$

$\cos P = 0.3333$

$P = \cos^{-1}(0.3333)$

$P = 70.5°$

(c) $\tan 44° = \frac{17}{z}$

$z \tan 44° = 17$

$z(0.9657) = 17$

$z = 17.6$

PTS: 1

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5. ANS:

(a) $\sin 28° = \frac{b}{12}$

$12(\sin 28°) = b$

$12(0.4695) = b$

$b = 5.6$

(b) $\cos P = \frac{9}{20}$

$\cos P = 0.45$

$P = \cos^{-1}(0.45)$

$P = 63.3°$

(c) $\tan 44° = \frac{7}{z}$

$z \tan 44° = 7$

$z(0.9657) = 7$

$z = 7.2$

PTS: 1

6. ANS:

(a) $\sin 51° = \frac{b}{6}$

$6(\sin 51°) = b$

$6(0.7771) = b$

$b = 4.7$

(b) $\cos P = \frac{3}{15}$

$\cos P = 0.2$

$P = \cos^{-1}(0.2)$

$P = 78.5°$

(c) $\tan 64° = \frac{20}{z}$

$z \tan 64° = 20$

$z(2.0503) = 20$

$z = 9.8$

PTS: 1

7. ANS:

(a) $\sin 60° = \frac{5}{c}$

$c \sin 60° = 5$

$c(0.866) = 5$

$c = 5.8$

(b) $\cos 50° = \frac{q}{17}$

$17(\cos 50°) = q$

$17(0.6428) = q$

$q = 10.9$

(c) $\tan X = \frac{2}{17}$

$\tan X = 0.1176$

$X = \tan^{-1}(0.1176)$

$X = 6.7°$

PTS: 1

8. ANS:

(a) $\sin 39° = \frac{b}{6}$

$6(\sin 39°) = b$

$6(0.6293) = b$

$b = 3.8$

(b) $\cos P = \frac{12}{16}$

$\cos P = 0.75$

$P = \cos^{-1}(0.75)$

$P = 41.4°$

(c) $\tan 43° = \frac{19}{z}$

$z \tan 43° = 19$

$z(0.9325) = 19$

$z = 20.4$

PTS: 1

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9. ANS:

(a) $\sin 41° = \frac{b}{16}$

$16(\sin 41°) = b$

$16(0.6561) = b$

$b = 10.5$

(b) $\cos P = \frac{8}{20}$

$\cos P = 0.4$

$P = \cos^{-1}(0.4)$

$P = 66.4°$

(c) $\tan 41° = \frac{20}{z}$

$z \tan 41° = 20$

$z(0.8693) = 20$

$z = 23$

PTS: 1

10. ANS:

(a) $\sin 54° = \frac{b}{11}$

$11(\sin 54°) = b$

$11(0.809) = b$

$b = 8.9$

(b) $\cos P = \frac{3}{7}$

$\cos P = 0.4286$

$P = \cos^{-1}(0.4286)$

$P = 64.6°$

(c) $\tan 35° = \frac{7}{z}$

$z \tan 35° = 7$

$z(0.7002) = 7$

$z = 10$

PTS: 1

11. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\cos = \frac{\text{adj}}{\text{hyp}}$ $\cos 27° = \frac{37}{c}$ $c = \frac{37}{\cos 27°}$ $c = 41.5$	$A + B + C = 180°$ $B = 180° - 90° - 27°$ $B = 63°$	$c^2 = a^2 + b^2$ $41.5^2 = a^2 + 37^2$ $a^2 = 41.5^2 - 37^2$ $a = 18.9$

PTS: 1

12. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\tan = \frac{\text{opp}}{\text{adj}}$ $\tan 40° = \frac{a}{13}$ $13 \tan 40° = a$ $a = 10.9$	$A + B + C = 180°$ $B = 180° - 90° - 40°$ $B = 50°$	$c^2 = a^2 + b^2$ $c^2 = 10.9^2 + 13^2$ $c = 17$

PTS: 1

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13. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\cos = \frac{\text{adj}}{\text{hyp}}$ $\cos A = \frac{35}{39}$ $A = \cos^{-1}(0.8974)$ $A = 26.2°$	$A + B + C = 180°$ $B = 180° - 90° - 63.8°$ $B = 63.8°$	$c^2 = a^2 + b^2$ $39^2 = a^2 + 35^2$ $a^2 = 39^2 - 35^2$ $a = 17.2$

PTS: 1

14. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\cos = \frac{\text{adj}}{\text{hyp}}$ $\cos 55° = \frac{b}{33}$ $33\cos 55° = b$ $b = 18.9$	$A + B + C = 180°$ $B = 180° - 90° - 55°$ $B = 35°$	$c^2 = a^2 + b^2$ $33^2 = a^2 + 18.9^2$ $a^2 = 33^2 - 18.9^2$ $a = 27$

PTS: 1

15. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\sin = \frac{\text{opp}}{\text{hyp}}$ $\sin 56° = \frac{34}{c}$ $c = \frac{34}{\sin 56°}$ $c = 41$	$A + B + C = 180°$ $B = 180° - 90° - 56°$ $B = 34°$	$c^2 = a^2 + b^2$ $41^2 = 34^2 + b^2$ $b^2 = 41^2 - 34^2$ $b = 22.9$

PTS: 1

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16. ANS:

Trigonometric Ratio	Angle Sum Theorem	Pythagorean Theorem
$\sin = \frac{\text{opp}}{\text{hyp}}$ $\sin A = \frac{12}{23}$ $A = \sin^{-1}(0.5217)$ $A = 31.4°$	$A + B + C = 180°$ $B = 180° - 90° - 31.4°$ $B = 58.6°$	$c^2 = a^2 + b^2$ $23^2 = 12^2 + b^2$ $b^2 = 23^2 - 12^2$ $b = 19.6$

PTS: 1

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