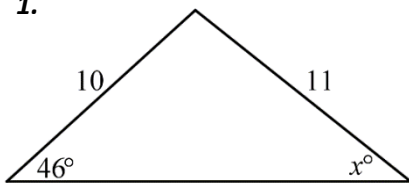


Name _____

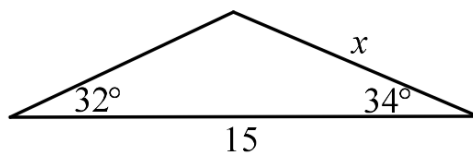
Law of Sines and Law of Cosines

Round your answers to the nearest tenth.

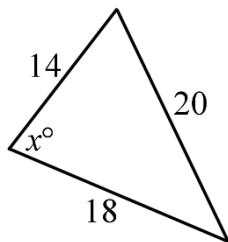
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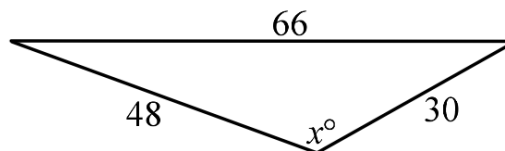
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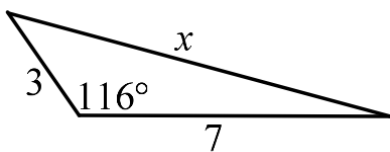
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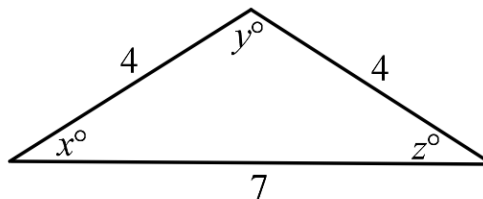
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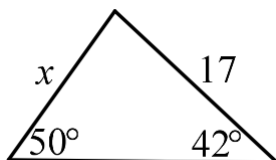
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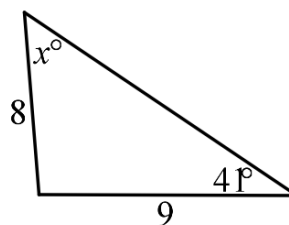
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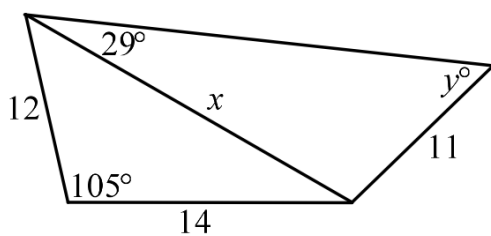
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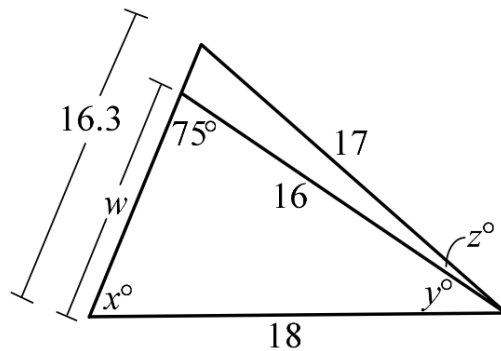
8.



9.



10.



Law of Sines and Law of Cosines Answers

$$1. \frac{\sin 46^\circ}{11} = \frac{\sin x^\circ}{10} \quad x \approx 40.8$$

$$2. \frac{\sin 114^\circ}{15} = \frac{\sin 32^\circ}{x} \quad x \approx 8.7$$

$$3. 20^2 = 14^2 + 18^2 - 2(14)(18)\cos x^\circ \quad x \approx 76.2$$

$$4. 66^2 = 48^2 + 30^2 - 2(48)(30)\cos x^\circ \quad x \approx 113.6$$

$$5. x^2 = 3^2 + 7^2 - 2(3)(7)\cos 116^\circ \quad x \approx 8.7$$

$$6. 4^2 = 4^2 + 7^2 - 2(4)(7)\cos x^\circ \quad x \approx 29.0$$

$y \approx 122$ or ≈ 122.1 when calculating using x vs. directly using Law of Cosines
 $z \approx 29.0$ (isosceles triangle – base angles are the same)

$$7. \frac{\sin 42^\circ}{x} = \frac{\sin 50^\circ}{17} \quad x \approx 14.8$$

$$8. \frac{\sin 41^\circ}{8} = \frac{\sin x^\circ}{9} \quad x \approx 47.6$$

$$9. x^2 = 12^2 + 14^2 - 2(12)(14)\cos 105^\circ \quad x \approx 20.7$$

$$\frac{\sin y^\circ}{20.7} = \frac{\sin 29^\circ}{11} \quad y \approx 65.8 \text{ (using the rounded answer for } x \text{ – if using the exact answer, then } y \approx 65.6)$$

$$10. \frac{\sin x^\circ}{16} = \frac{\sin 75^\circ}{18} \quad x \approx 59.2$$

$$y \approx 180 - 75 - 59.2 = 45.8$$

$$\frac{\sin 45.8^\circ}{w} = \frac{\sin 75^\circ}{18} \quad w \approx 13.4$$

$$16.3 - 13.4 = 2.9 \quad 180 - 75 = 105$$

$$\frac{\sin z^\circ}{2.9} = \frac{\sin 105^\circ}{17} \quad z \approx 9.5$$

Note: Answers may vary slightly due to rounding in calculations and set-up.