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Lesson: Triangle Sum Theorem and Exterior Angle Theorem- Middle School

Name:

Teacher:

Date:

1. A triangle has two angles measuring 65° and 75° . What is the third angle?
 - a) 40°
 - b) 45°
 - c) 55°
 - d) 50°
2. The angles of a triangle are x , $2x$, and $3x$. Find each angle.
 - a) 15° , 45° , 120°
 - b) 30° , 60° , 90°
 - c) 25° , 50° , 105°
 - d) 20° , 40° , 120°
3. In a triangle, one angle is 50° , another angle is 1.4 times the first angle. Find the third angle.
 - a) 60°
 - b) 90°
 - c) 70°
 - d) 80°
4. The angles of a triangle are in the ratio 2:3:4. Find the measures.
 - a) 40° , 60° , 80°
 - b) 20° , 60° , 100°
 - c) 45° , 60° , 75°
 - d) 30° , 60° , 90°
5. One angle of a triangle is 30° less than the second angle, and the third angle is 60° . Find the second angle.
 - a) 60°
 - b) 90°
 - c) 70°
 - d) 80°



6. A right triangle has one angle that measures 35° . What is the other acute angle?

7. A triangle has two angles: x and $(x + 40)$. If the third angle is 80° , what is x ?

8. The smallest angle of a triangle is half the largest angle, and the middle angle is 60° . Find the largest angle.

9. A triangle has angles 50° , $(2x + 10)^\circ$, and $(3x - 20)^\circ$. What is the value of x ?

10. A triangle has two equal angles. The third angle is 40° larger than each equal angle. What is the third angle?

11. An exterior angle of a triangle is 120° . One remote interior angle is 50° . The other is:

12. An exterior angle is 140° , and one remote interior angle is 65° . The other is:

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20. A triangle has angles $(x + 20)^\circ$, $(2x - 10)^\circ$, and y° . The exterior angle at vertex y is 150° . What is x ?

a) 45

b) 40

c) 35

d) 30



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Answer Keys

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|--------------------------------------|--------------------------------------|--------------------|
| 1. a) 40° | 2. b) $30^\circ, 60^\circ, 90^\circ$ | 3. a) 60° |
| 4. a) $40^\circ, 60^\circ, 80^\circ$ | 5. b) 90° | 6. c) 55° |
| 7. c) 30° | 8. a) 120° | 9. a) 25 |
| 10. d) 100° | 11. d) 70° | 12. d) 75° |
| 13. c) 75° | 14. b) 30 | 15. a) 40 |
| 16. d) 80° | 17. c) 20 | 18. a) 180° |
| 19. c) 60° | 20. d) 30 | |