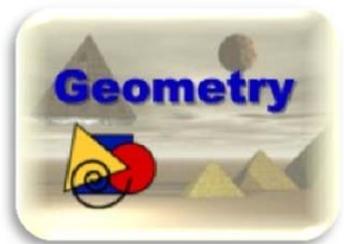


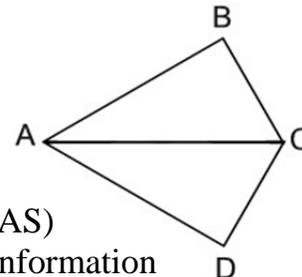
# Triangles

Name \_\_\_\_\_



1.  $\triangle ABC \cong \triangle A'B'C'$ ,  $m\angle C = 3x - 40$  and  $m\angle C' = 2x - 10$ . Find  $m\angle C$ .  
 [1] 15                      [2] 30                      [3] 50                      [4] 90

2. Given:  $\overline{AC}$  bisects  $\angle BAD$  and  $\angle BCD$   
 Which of the following methods can be used to prove  $\triangle ABC \cong \triangle ADC$ ?

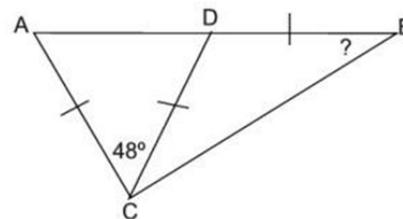


- [1] Side-Angle-Side (SAS)                      [3] Angle-Angle-Side (AAS)  
 [2] Angle-Side-Angle (ASA)                      [4] There is insufficient information to determine if the triangles are congruent.

3. In triangle  $ABC$ ,  $m\angle A = 48^\circ$ , and  $m\angle C = 24^\circ$ . What type of triangle is triangle  $ABC$ ?  
 [1] acute                      [2] right                      [3] obtuse                      [4] isosceles

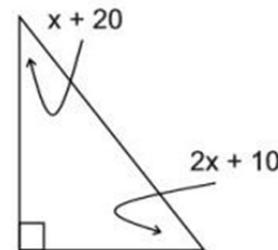
4. Two sides of an isosceles triangle measure 3 and 7. Which of the following could be the measure of the third side?  
 [1] 9                      [2] 7                      [3] 5                      [4] 3

5. In the diagram at the right,  $\overline{AC} \cong \overline{DC} \cong \overline{DB}$ .  
 If the  $m\angle ACD = 48^\circ$ , find the  $m\angle B$ .



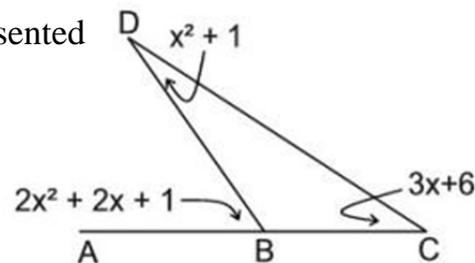
- [1]  $24^\circ$                       [3]  $48^\circ$   
 [2]  $33^\circ$                       [4]  $66^\circ$

6. The diagram at the right shows a right triangle with representations for two angles. What is the value of  $x$ ?  
 [1] 15                      [2] 20                      [3] 24                      [4] 30



7. The midpoints of the sides of triangle  $ABC$  are labeled  $D$ ,  $E$  and  $F$ . If the perimeter of triangle  $DEF$  is 24, find the perimeter of triangle  $ABC$ .  
 [1] 48                      [2] 72                      [3] 96                      [4] 120

8. In the diagram at the right, the angles are represented as shown. Find the  $m\angle DBC$ .



- [1]  $25^\circ$                       [3]  $155^\circ$   
 [2]  $125^\circ$                       [4]  $158^\circ$

1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_  
 5. \_\_\_\_\_  
 6. \_\_\_\_\_  
 7. \_\_\_\_\_  
 8. \_\_\_\_\_

9. The vertex angle of an isosceles triangle measures eight times the measure of a base angle. Find the measure of a base angle.

- [1]  $18^\circ$                       [2]  $24^\circ$                       [3]  $36^\circ$                       [4]  $43^\circ$

9. \_\_\_\_\_

10. The sides of a triangle are 5, 6 and 10. Find the length of the longest side of a similar triangle whose shortest side is 15.

- [1] 10                      [2] 15                      [3] 18                      [4] 30

10. \_\_\_\_\_

11. A frisbee lands on the top of a 15' concrete wall. To retrieve the frisbee, a ladder must be placed such that the foot of the ladder is 6 feet from the base of the wall and the top of the ladder rests on the top of the wall. Which choice is the shortest length ladder that can be used?

- [1] 15'                      [2] 16'                      [3] 17'                      [4] 18'

11. \_\_\_\_\_

12. In triangle  $ABC$ ,  $m\angle A = 60$  and  $m\angle B = 40$ . Which side of triangle  $ABC$  is the longest?

- [1]  $\overline{AC}$                       [2]  $\overline{AB}$                       [3]  $\overline{BC}$                       [4]  $\overline{BC} \cong \overline{AB}$

12. \_\_\_\_\_

13. At a certain time of the day, the shadow of a 5' boy is 8' long. The shadow of a nearby flagpole at this same time is 28' long. How tall is the flagpole?

- [1] 8.5'                      [2] 16'                      [3] 17.5'                      [4] 20'

13. \_\_\_\_\_

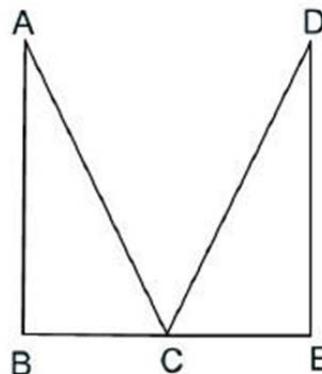
14. Which of the following lengths are the sides of a right triangle?

- [1] 2.4, 3.2, 4                      [3] 3.1, 4.2, 4.8  
[2] 4.3, 4.4, 4.5                      [4] All of the above.

14. \_\_\_\_\_

15. Given:  $\overline{AB} \cong \overline{DE}$  and  $\angle A \cong \angle D$ . Which of the following methods can be used to prove that  $\triangle ABC \cong \triangle DEC$ ?

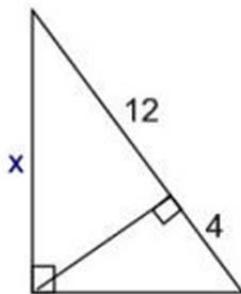
- [1] Side-Angle-Side (SAS)  
[2] Angle-Side-Angle (ASA)  
[3] Side-Side-Side (SSS)  
[4] There is insufficient information to determine if the triangles are congruent.



15. \_\_\_\_\_

16. Find  $x$  to the nearest tenth.

- [1] 6.9  
[2] 8.0  
[3] 13.9  
[4] 15.0



16. \_\_\_\_\_

17. In triangle  $ABC$ ,  $\angle A$  is obtuse. Which statement is true about the sum of the measures of  $\angle B$  and  $\angle C$ ?

- [1]  $m\angle B + m\angle C = 90$                       [3]  $m\angle B + m\angle C < 90$   
 [2]  $m\angle B + m\angle C > 90$                       [4]  $m\angle B + m\angle C = 180$

17. \_\_\_\_\_

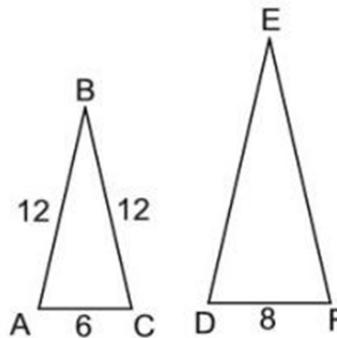
18. The legs of a right triangle measure 8 and 15. If a leg and hypotenuse of another right triangle are 8 and 17 respectively, these two right triangles are congruent.

- [1] TRUE                      [2] FALSE

18. \_\_\_\_\_

19. In the accompanying diagram, triangle  $ABC$  is similar to triangle  $DEF$ ,  $AC = 6$ ,  $AB = BC = 12$ , and  $DF = 8$ . Find the perimeter of triangle  $DEF$ .

- [1] 32                      [2] 36                      [3] 40                      [4] 60



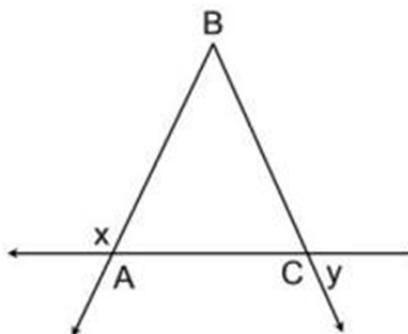
19. \_\_\_\_\_

20. In the accompanying diagram,

$\overline{BA} \cong \overline{BC}$  and  $m\angle x = 117$ .

Find  $m\angle y$ .

- [1] 117                      [3] 63  
 [2] 110                      [4] 27



20. \_\_\_\_\_