Unit 1 Review for Assessment

Part 1: Multiple Choice Questions

1. Intersecting lines are _________________ non-coplanar.
   a. always
   b. sometimes
   c. never

2. Two non-parallel lines _________________ intersect at one point.
   a. always
   b. sometimes
   c. never

3. Two points are _________________ collinear.
   a. always
   b. sometimes
   c. never

4. Three points are _________________ collinear.
   a. always
   b. sometimes
   c. never

5. Three points are _________________ coplanar.
   a. always
   b. sometimes
   c. never

6. Four points are _________________ coplanar.
   a. always
   b. sometimes
   c. never

7. When two planes intersect, they do so:
   a. at a point
   b. along a line
   c. along a plane

8. All points along a line are _________________ collinear.
   a. always
   b. sometimes
   c. never

9. Opposite rays (check all that apply):
   a. are collinear
   b. have the same endpoint
   c. sometimes overlap
   d. form a straight angle
10. If points A, B, C are collinear with C between A and B, the segment addition postulate is:
   a. \( AB + BC = AC \)
   b. \( BA + CB = AC \)
   c. \( BC + CA = AB \)
   d. \( BC + AC = CA \)

11. Points J, K and L are collinear with J between L and K. If \( KJ = 2x - 3 \), \( LK = 9x + 7 \) and \( LJ = 4x - 8 \), solve for \( x \):
   a. 6
   b. -6
   c. -4
   d. 4

12. The Pythagorean Theorem refers to the relationship between sides of a _____________ triangle.
   a. obtuse
   b. scalene
   c. right
   d. equilateral

13. Find the value of \( x \) in the triangle to the right.
   a. \( \sqrt{21} \)
   b. \( 3\sqrt{119} \)
   c. 21
   d. 39

14. A triangle has sides 21, 28 & 35. Is it a right triangle?
   a. Yes
   b. No

15. What is the distance between points \((-2, 1)\) and \((2, 4)\)?
   a. 3
   b. \( \sqrt{37} \)
   c. 5
   d. \( \sqrt{5} \)

16. What is the distance between points \((1, 2)\) and \((3, 4)\)?
   a. 2
   b. \( \sqrt{8} \)
   c. \( 2\sqrt{2} \)
   d. \( 8\sqrt{2} \)

17. Determine the area of the figure to the right.
   a. 30
   b. \( 3\sqrt{10} \)
   c. 60
   d. \( 2\sqrt{10} \)
18. What is the midpoint between points (-1, 4) and (7, 6)
   a. (6, 5)
   b. (3, 5)
   c. (5, 5)
   d. (5, 3)

19. Find the midpoints between points (7, -9) and (3, 5)
   a. (5, 2)
   b. (2, 5)
   c. (-5, 2)
   d. (-5, -2)

20. The midpoint of a line segment is (3, 4). One endpoint has the coordinates (-3, -2). What are the coordinates of the other endpoints?
   a. (9, 10)
   b. (-3, -2)
   c. (10, 9)
   d. (1, 0)

21. The locus between the endpoints of a line segment (check all that apply):
   a. forms a perpendicular line
   b. is formed of points equidistant from the endpoints
   c. is a parallel line to the line segment
   d. bisects the line segment

22. How many points on the locus are equidistant from the endpoints of a line segment?
   a. 0
   b. 1
   c. 2
   d. Infinite

23. Two rays that have a common endpoint could form (check all that apply):
   a. an angle
   b. a straight line
   c. opposite rays
   d. a vertex

24. Acute angles are:
   a. less than 90°
   b. greater than 90° but less than 180°
   c. equal to 180°
   d. greater than 180° but less than 360°

25. Obtuse angles are:
   a. less than 90°
   b. greater than 90° but less than 180°
   c. equal to 180°
   d. greater than 180° but less than 360°
26. Adjacent angles (check all that apply):
   a. have a common side
   b. sum to 90°
   c. share a common vertex
   d. are less than 90°

27. Complementary angles (check all that apply):
   a. sum to 90°
   b. sum to 180°
   c. form a straight angle
   d. form a right angle
   e. are adjacent angles

28. Supplementary angles (check all that apply):
   a. sum to 90°
   b. sum to 180°
   c. form a straight angle
   d. form a right angle
   e. are adjacent angles

29. An angle is 34° more than its compliment. What is the measure of the angle?
   a. 64°
   b. 124°
   c. 28°
   d. 62°

30. An angle is 58° less than its supplement. What is the measure of the angle?
   a. 33°
   b. 61°
   c. 123°
   d. 154°

31. Find the measures of the angles to the right.
   a. \(m_1 = 67°, m_2 = 67°, m_3 = 113°\)
   b. \(m_1 = 77°, m_2 = 113°, m_3 = 77°\)
   c. \(m_1 = 67°, m_2 = 113°, m_3 = 67°\)
   d. \(m_1 = 113°, m_2 = 67°, m_3 = 67°\)

32. Find the value of x in the figure to the right.
   a. \(\frac{x}{2}\)
   b. 9
   c. 12
   d. 24
33. An angle bisector (check all that apply):
   a. forms two congruent angles
   b. is a line or a ray
   c. is equidistant from the sides of the angle
   d. forms two adjacent angles

34. The statement, "the whole is the sum of the parts" refers to (check all that apply):
   a. complementary angles
   b. the segment addition postulate
   c. adjacent angles
   d. the angle addition postulate

**Constructed Response Questions**

35. Points B, D, F, H and J are collinear and are in the following order
   - D is between J and B
   - F is between D and J
   - B is between F and H
   - JH = 47, FB = 12, FD = DB = BH and JF = 3x - 7
   Draw a diagram of the points, solve for x and solve for JF.

36. Write the distance formula and use it to find the distance between point B (-2, 5) and point C (4, -3). What are the coordinates of the midpoint?

37. If the hypotenuse of a right triangle has a measurement of 13 units and one of the sides measures 12 units, what is the measurement of the remaining side? Show your work.

38. An angle is 36° less than its complement. What is the measure of the angle?

39. An angle is 102° more than its supplement. What is the measure of the angle?

40. If F is in the interior of ∠APB and m∠APB = (5x + 11)°, m∠APF = (6x - 6)° and m∠fPB = (9x - 23)°:
   A) Draw a diagram
   B) Solve for x
   C) What is the m∠APF and m∠APB?