Multiple Choice Practice
Coordinate Geometry
Geometry Level
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Also available in **Hardcopy** (.pdf):
Coordinate Geometry

> ***Directions:*** *Choose the best answer. Answer ALL questions (or only a few at a time), then use the BUTTON at the BOTTOM of the page to check your answers. If you are told that an answer is incorrect, go back and redo that question and CHECK ANSWERS again. You may CHECK ANSWERS at any time. You may use your graphing calculator when working on these problems.*

1. Find the midpoint of the segment joining the points (4, -2) and (-8,6).

   ○ [1] (6, 4)   ○ [2] (-6,-4)   ○ [3] (2, 2)   ◉ [4] (-2, 2)

2. Find the distance between the points (3, -2) and (6,4).

   ○ [1] $\sqrt{85}$ ○ [2] $\sqrt{79}$ ○ [3] $5\sqrt{3}$ ◉ [4] $3\sqrt{5}$

3. What is the slope of the line passing through the points (4,6) and (-1,-2)?
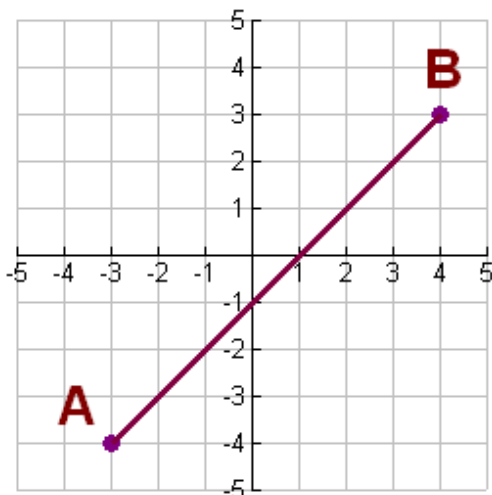
   ○ [1] 4/3   ○ [2] 3/4   ◉ [3] 8/5   ○ [4] 5/8

4. M is the midpoint of $\overline{AB}$. The coordinates of A are (-2,3) and the coordinates of M are (1,0). Find the coordinates of B.

   ○ [1] (-1/2, 3/2)   ◉ [2] (4,-3)   ○ [3] (-4,3)   ○ [4] (-5,6)

5. The point (-4,-2) lies on a circle. What is the length of the radius of this circle if the center is located at (-8,-10)?

   ○ [1] $\sqrt{48}$ ◉ [2] $\sqrt{80}$ ○ [3] $\sqrt{108}$ ○ [4] $\sqrt{288}$

6. Find AB.

    ○ [1] 1

    ○ [2] $\sqrt{2}$

    ○ [3] $2\sqrt{7}$

    ◉ [4] $7\sqrt{2}$

7. Which point satisfies the linear quadratic system $y = x + 3$ and $y = 5 - x^2$?

    ◉ [1] (-2,1)　　　　○ [2] (2,1)　　　　○ [3] (-1,2)　　　　○ [4] (4,-1)

**8.** When proving that a quadrilateral is a trapezoid, it is necessary to show

    ○ [1] only one set of parallel sides.
    ◉ [2] one set of parallel sides and one set of non-parallel sides.
    ○ [3] one set of parallel sides and one set of congruent sides.
    ○ [4] two sets of parallel sides.

9. Find the slope of a line perpendicular to the line whose equation is $2y + 6x = 24$.

    ○ [1] -3　　　　○ [2] 6　　　　◉ [3] 1/3　　　　○ [4] -1/6

10. A student enters the following information into his/her calculator when attempting to find the slope between the points (6,7) and (-5,3). Which of the following statements is TRUE?

    ○ [1] The student is correct, the slope is 11.5.

    ○ [2] The slope formula does not involve subtraction.

    ○ [3] The slope is actually -11.5.
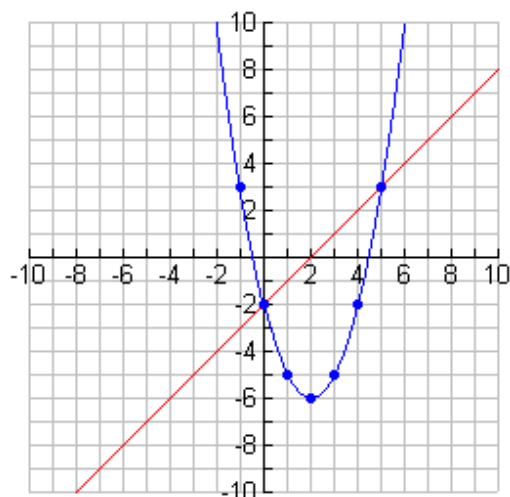
    ◉ [4] The slope is actually 4/11.

```
7-3/6- -5
              11.5
■
```
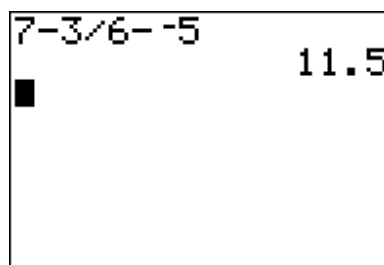
11. Find the midpoint of the segment connecting the points (a, b) and ($5a$, $-7b$).

⦿ [1] ($3a$, $-3b$)   ○ [2] ($2a$, $-3b$)   ○ [3] ($3a$, $-4b$)   ○ [4] ($-2a$, $4b$)

12. Find the radius of a circle whose diameter has endpoints (-3, -2) and (7, 8).

○ [1] 5   ⦿ [2] $5\sqrt{2}$ ○ [3] (2,3)   ○ [4] $\sqrt{52}$

13. From observing the graph at the right, what is(are) the solution(s) to this linear quadratic system?

○ [1] (5,3)

○ [2] (2,-6)

○ [3] (5,3) and (-1,3)

⦿ [4] (5,3) and (0,-2)

14. The birds shown on the graph below are flying toward one another at the same speed and same altitude on a straight line course. The birds start from points A(-4,4) and B(10,-2). How far will each bird fly (to the *nearest mile*) before they collide, if each grid on the graph represents 5 miles?
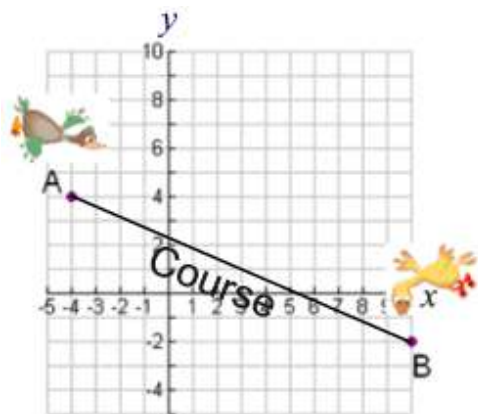
○ [1] 8 miles

○ [2] 10 miles

⦿ [3] 38 miles

○ [4] 40 miles

15. Find the equation of the line parallel to the line whose equation is $y = 6x + 7$ and whose *y*-intercept is 8.

    ○ [1] $y = -6x + 8$ ○ [2] $y = (-1/6)x + 8$ ○ [3] $y = (1/6)x + 8$ ◉ [4] $y = 6x + 8$

16. When proving that a quadrilateral is a parallelogram by *using slopes,* you must find:

    ◉ [1] the slopes of all four sides
    ○ [2] the slopes of two opposite sides.
    ○ [3] the lengths of all four sides.
    ○ [4] both the lengths and slopes of all four sides.

17. Which of the following is TRUE regarding the graphs of the equations of a linear quadratic system?

    ○ [1] the graphs may intersect in two locations.
    ○ [2] the graphs may intersect in one location.
    ○ [3] the graphs may not intersect.
    ◉ [4] all three choices are true.

18. What is the center of a circle whose equation is $(x - 1)^2 + (y + 3)^2 = 25$?

    ○ [1] (-1, 3)   ○ [2] (3, -1)   ◉ [3] (1, -3)   ○ [4] (-3, 1)

19. A lawn service company offers services within an 20 mile radius of their office. When the service area is represented graphically with the office located at (0,0), the equation that represents the service area is:

    ○ [1] $x^2 + y^2 = 20$ ○ [2] $x^2 + y^2 = 40$ ◉ [3] $x^2 + y^2 = 400$ ○ [4] $x^2 + y^2 = 4000$

20. When proving that a triangle is a right triangle using coordinate geometry methods, you must:

    ○ [1] show that the slopes of two of the sides are negative reciprocals creating perpendicular lines and right angles.
    ○ [2] show that the lengths of the sides satisfy the Pythagorean Theorem, thus creating a right angle.

◉ [3] both choices 1 and 2 may be used.

◯ [4] neither choice 1 nor 2 may be used.

Check Answers

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