**Coordinate Geometry**

**April 2015**

19. In the standard (x,y) coordinate plane, the point (2,-4) is the midpoint of the line segment with endpoints (8,-8) and:

1. (-4, 0)
2. (-4, -16)
3. (3, -2)
4. (4, 0)
5. (5, -6)

**June 2015**

5. A line in the standard (x,y) coordinate plane passes through the points (-3,4) and (2,-5). The slope of the line:

1. is positive.
2. is zero.
3. is negative.
4. is undefined.
5. cannot be determined from the given information.

8. When points A and B(-3,4) and graphed in the standard (x,y) coordinate plane below, the midpoint of (line)AB will be (1,2). What will be the coordinate of points A?

1. (-7,6)
2. (-2,1)
3. (-1,3)
4. (-1,8)
5. (5,0)

[PICTURE]

36. In the figure shown below, ABCD is a rectangle, EFGH is a square, and (line)CD is the diameter of a semicircle. Point K is the midpoint of (line)CD. Point J is the midpoint of both (line)AB and (line)EF. Points E and F lie on (line)AB. The 3 given lengths are in meters. The figure will be placed in the standard (x,y) coordinate plane so that K is at the origin, (line)AB is parallel to the x-axis, and 1 meter equals 1 coordinate unit. Which of the following values could be the y-coordinate of H?

1. 1.8
2. 3.6
3. 8.4
4. 10
5. 12

[PICTURE]

37. What is the length, in coordinate units, of the altitude from C to (line)AB in the (triangle)ABC shown in the standard (x,y) coordinate plane below?

1. 3
2. 5
3. 6
4. (rad)10
5. (rad)13

[PICTURE]

**December 2015**

24. What is the length, in coordinate units, of the line segment with endpoints (-8,4) and (4,9) in the standard (x,y) coordinate plane?

1. (rad)41
2. (rad)119
3. (rad)169
4. (rad)185
5. (rad)313

41. In the standard (x,y) coordinate plane below, R is located at (1,0), S is located at (1,2), and T is located at (4,0) to form right triangle (triangle)RST. The given lengths are in coordinate units. What is the slope of (line)ST?

1. –3/2
2. –2/3
3. 1/2
4. 2/3
5. 3/2

[PICTURE]

42. In the standard (x,y) coordinate plane below, R is located at (1,0), S is located at (1,2), and T is located at (4,0) to form right triangle (triangle)RST. The given lengths are in coordinate units. What is the midpoint of (line)ST?

1. (2, 1)
2. (2, 3/2)
3. (5/2, 1)
4. (3, 1/2)
5. (3, 3/2)

[PICTURE]

**June 2016**

11. Points C(2,5) and D(8,11) lie in the standard (x,y) coordinate plane. What is the midpoint of (line)CD?

1. (3,8)
2. (5,6)
3. (5,8)
4. (6,6)
5. (6,8)

35. Square ABCD, shown below, has side length 5 meters. The square is divided into 25 nonoverlapping congruent squares. Point P is the center of ABCD. What is the length, in meters, of (line)AC?

1. 2(rad)5
2. 5
3. 5(rad)2
4. 20
5. 25

[PICTURE]

38. Square ABCD, shown below, has side length 5 meters. The square is divided into 25 nonoverlapping congruent squares. Point P is the center of ABCD. Supposed ABCD is in the standard (x,y) coordinate plane such that (line)BC is on the x-axis, the midpoint of (line)BC is at the origin, A has positive coordinates, and 1 coordinate unit is equal to 1 meter. What are the coordinates of D?

1. (-5,5)
2. (-2.5,0)
3. (-2.5,2.5)
4. (-2.5,5)
5. (0,5)

[PICTURE]

**April 2016**

15. In the standard (x,y) coordinate plane below, 5 points are labeled on a parabola. Which of the following lines has the slope of *least* value?

* 1. (line) AB
  2. (line)AE
  3. (line)BC
  4. (line)CD
  5. (line)DE

[PICTURE]

28. On Friday night, the Morrison family set up camp in the Ocala National Forest. On Saturday morning they hiked to a wilderness area 3 miles due north and 4 miles due east of their campsite. The elevation of the wilderness area is the same as the elevation of the campsite. To the nearest 0.1 mile, what is the straight-line distance from the wilderness area to the Morrisons’ campsite?

1. 3.5
2. 3.7
3. 5.0
4. 5.5
5. 7.0

33. In the figure shown below, trapezoid ABCD is formed by (triangle)ABC and (triangle)ACD. The lengths are given in inches. Suppose ABCD is placed in the standard (x,y) coordinate plane such that C is at (0,0), B is at (25,0), and A and D have positive x- and y-coordinates. What is the x-coordinate of D?

* 1. 1
  2. 2
  3. 5
  4. 12
  5. 14

[PICTURE]

39. Points A lies at (2,6) and point B lies at (-5, 10) in the standard (x,y) coordinate plane below. What is the length, in coordinate units, of (line)AB?

* 1. (rad)40
  2. (rad)65
  3. (rad)125
  4. 13
  5. 17

[PICTURE]

**December 2016**

1. 12. What is the slope of (line) HM, as shown in the standard (x,y) coordinate plane below?
   1. -3/2
   2. -1
   3. -2/3
   4. 2/3
   5. 3/2

[PICTURE]

**June 2017**

30. Parallelogram ABCD is graphed in the standard (x,y) coordinate plane below. Sides (line)AB and (line)CD are each (rad)10 coordinate units long. Sides (line)AD and (line)BC are each 5 coordinate units long. The distance between (line)AD and (line)BC is 3 coordinate units. What is the distance, in coordinate units, from B to D?

1. 3
2. 4
3. 5
4. 7
5. 8

[PICTURE]

31. Parallelogram ABCD is graphed in the standard (x,y) coordinate plane below. Sides (line)AB and (line)CD are each (rad)10 coordinate units long. Sides (line)AD and (line)BC are each 5 coordinate units long. The distance between (line)AD and (line)BC is 3 coordinate units. What is the slope of (line)BC?

1. 0
2. 1
3. 4
4. 5
5. Undefined

[PICTURE]

**April 2017**

9. In the standard (x,y) coordinate plane, what is the midpoint of the line segment that has endpoints (3,8) and (1,-4)?

1. (-2,-12)
2. (-1,-6)
3. (11/2,-3/2)
4. (2,2)
5. (4,-12)

11. What is the slope of the line through (-2,1) and (2,-5) in the standard (x,y) coordinate plane?

1. 3/2
2. 1
3. -1
4. -3/2
5. -4

19. The lengths of the 2 legs of right triangle (triangle)ABC shown below are given in inches. The midpoint of (line)AB is how many inches from A?

1. 16
2. 20
3. 21
4. 28
5. 40

[PICTURE]

26. A circle in the standard (x,y) coordinate plane has center C(-1,2) and passes through A(2,6). Line segment (line)AB is a diameter of this circle. What are the coordinates of point B?

1. (-6, -2)
2. (-5, -1)
3. (-4, -2)
4. (4, 2)
5. (5, 10)