: _____ Date: _____

Distance, Midpoint, Slope

.: is the midpoint of the line segment that joins points $(4,-2)$ and $(-2,5)$?

2. The endpoints of $\overline{AB}$ are $A(3,-4)$ and $B(7,2)$. Determine and state the length of $\overline{AB}$ in simplest radical form.

3. What is the slope of a line passing through the points (-2, 1) and (4, -5)?

4. Point M is the midpoint o. $\overline{B}$. If the coordinates of A are $(-3,6)$ and the coordinates of M are $(-5,2)$, what are the co dinates of B?

5. Find the value of k so th t ne slope of the line joining $(5,k)$ and $(6,k^2)$ is 30.

6. Line segment AB has endpoint A l ated at the origin. Line segment AB is longest when the coordinates of B are

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

7. If a line segment has endpoints $A(3x+5,3y)$ and $B(x-1,-y)$, what are the coordinates of the midpoint of $\overline{AB}$?

8. If the slope of the line joining the points (2,4) and $(5,k)$ is 2, find the value of k.

9. A line segment on the coordinate plane has endpoints (2,4) and $(4,y)$. The midpoint of the segment is point (3,7). What is the value of y?

10.

Two points whose coordinates are (7) and $(2,a)$ determine a line whose slope is 6. Find the value of a.

11. In circle O, a diameter has dpoints $(-5,4)$ and $(3,-6)$. What is the length of the diameter?

12. M is the midpoint of $\overline{AB}$. the coordinates of A are $(-1,5)$ and the coordinates of M are $(3,3)$, what are the coordi ites of B?

13. In Circle O, a diameter as endpoints $(-3,2)$ and $(1,0)$, what is the length of the radius to the nearest tenth?

14.

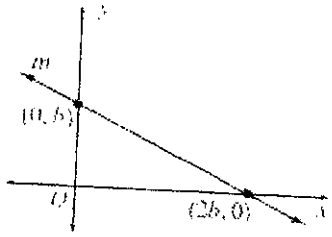
If the points (3,5), (4,2) and (5,k) lie on a straight line, the value of k is

A) 1 B) -2 C) -1 D) 0

15. In circle O, diameter $\overline{RS}$ has endpoints $R(3a, 2b-1)$ and $S(a-6, 4b+5)$. Find the coordinates of point O, in terms of a and b. Express your answer in simplest form.

16. Find the value of k, given the points P(2, 3) and Q(k, -1), if PQ has slope, m = undefined.

17.



In the given figure, what is the slope of line m?

(1) 2

(2) $\frac{1}{2}$

(3) $-\frac{1}{2}$

(4) -2