Class Name : **MATH 1050/1051 Fall 2018**

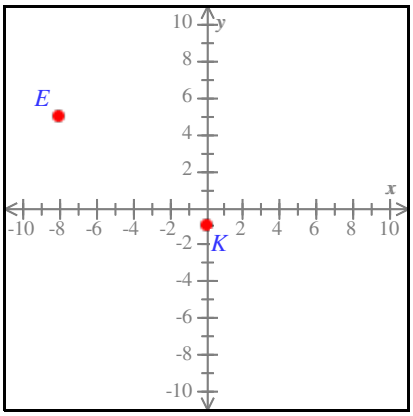
Instructor Name : **Nguyen**

Student Name : _____

Instructor Note :

1. Calculate the distance between the points $K=(0,\ -1)$ and $E=(-8,\ 5)$ in the coordinate plane.

Give an exact answer (not a decimal approximation).



2. Use substitution to solve the system.

$$y = 3x + 11$$
$$-2x + 5y = 16$$

$x =$ ☐

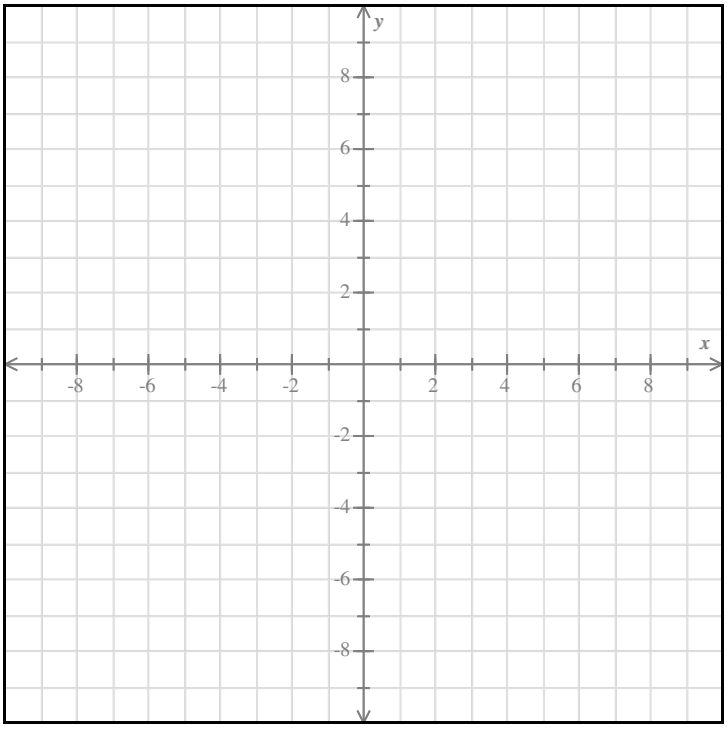
$y =$ ☐

3. The equation of a circle is given below. Identify the center and radius. Then graph the circle.

$$x^2+y^2=25$$

Center: (_____, _____)

Radius: _____



4. Find the first four terms of the sequence given by the following.

$$a_n=(-1)^{n+1}\cdot n^2\ ,\ n=1,\ 2,\ 3,\ \ldots$$

5. For a given arithmetic sequence, the first term, a_1, is equal to -1, and the 10^{th} term, a_{10}, is equal to 62.

Find the value of the 95^{th} term, a_{95}.

6. Compute the sums below. (Assume that the terms in the first sum are consecutive terms of an arithmetic sequence.)

(a) $7+11+15+\ldots+471=$

(b) $\sum_{i=1}^{145}(2i-6)=$

7. Fill in the missing numbers in the table below.
Then use the table to fill in the apparent value of the following limit.

$$\lim_{x\to 5}\frac{9(5-x)}{25-x^2}$$

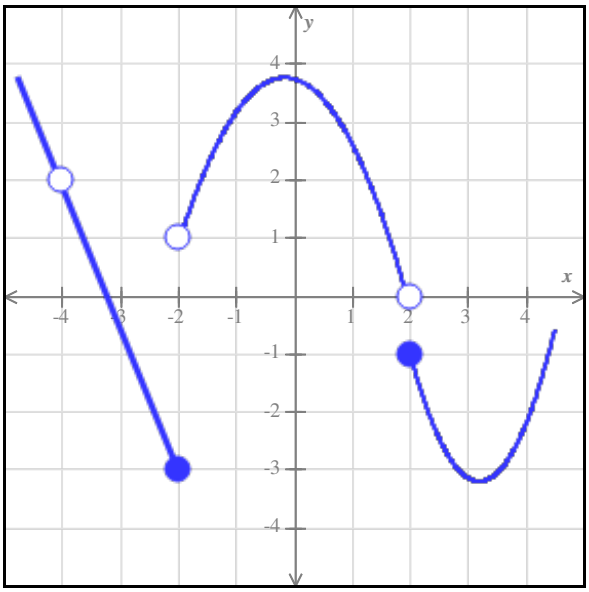
Round your answers to 4 decimal places where applicable.

$\rightarrow \quad \leftarrow$

x	4.5	4.9	4.95	4.999	5	5.001	5.05	5.1	5.5
$\frac{9(5-x)}{25-x^2}$	0.9474	0.9091				0.8999	0.8955	0.8911	0.8571

$$\lim_{x\to 5}\frac{9(5-x)}{25-x^2}=$$

8. The function h is graphed below. Find the following limits.
If a limit does not exist, write "Does Not Exist."



(a) $\lim_{x \to 2^+} h(x)$

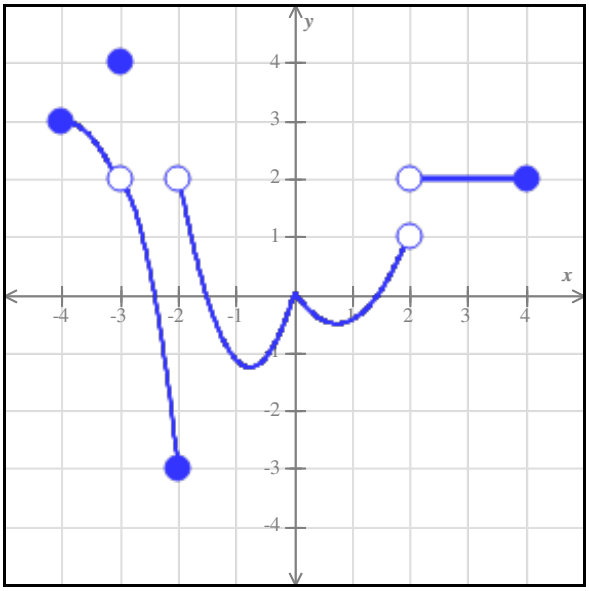
(b) $\lim_{x \to 2^-} h(x)$

(c) $\lim_{x \to 2} h(x)$

9. The function f is graphed below.

At what numbers in the interval $(-4, 4)$ is f discontinuous?

If there is more than one number, separate them with commas.
If there are no discontinuities, write "None."



Obj. 12 #5 Answers for class MATH 1050/1051 Fall 2018

1. Distance unsimplified: $\sqrt{100}$

Distance simplified: 10

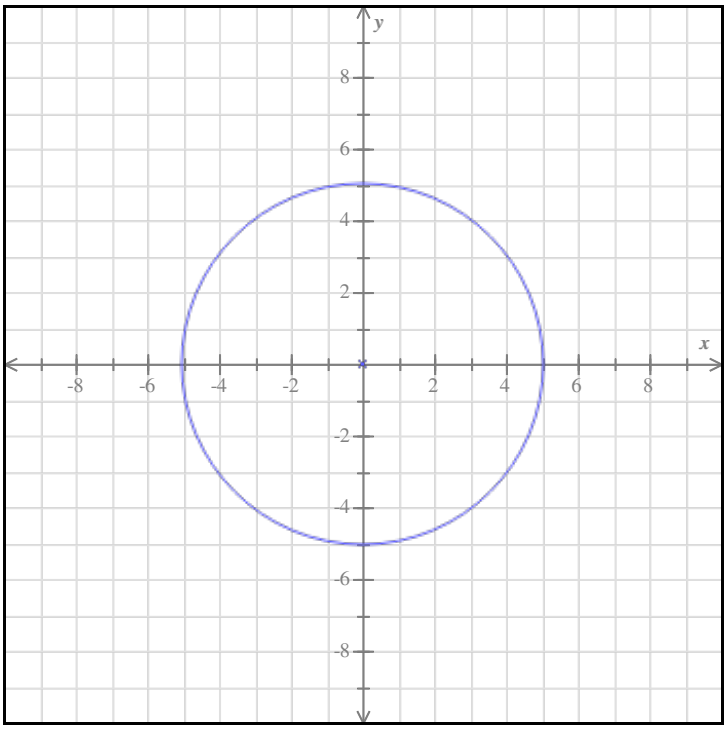
2.

$x = -3$

$y = 2$

3. Center: $(0, 0)$

Radius: 5



4. $1\ ,\ -4\ ,\ 9\ ,\ -16$

5. $a_{95} = 657$

6.

(a) $7+11+15+\ldots+471=27{,}963$

(b) $\sum_{i=1}^{145}(2i-6)=20{,}300$.

7.

$\rightarrow \quad \leftarrow$

x	4.5	4.9	4.95	4.999	5	5.001	5.05	5.1	5.5
$\frac{9(5-x)}{25-x^2}$	0.9474	0.9091	0.9045	0.9001		0.8999	0.8955	0.8911	0.8571

$$\lim_{x\to 5}\frac{9(5-x)}{25-x^2}=0.9$$

8.

(a) $\lim_{x\to 2^+}h(x)=-1$

(b) $\lim_{x\to 2^-}h(x)=0$

(c) $\lim_{x\to 2}h(x)$ Does Not Exist

9. $-3,\ -2,\ 2$