Name: _____ Date: _____ Row: _____ Period: _____ Assignment #: _____

CHAPTER 9

NAME _____ DATE _____

SAT/ACT Chapter Test

For use after Chapter 9

1. The variable x varies inversely with y. When $x = -3$, $y = -2$. Which equation relates x and y?

Ⓐ $\frac{x}{y} = \frac{-3}{-2}$ Ⓑ $xy = 6$

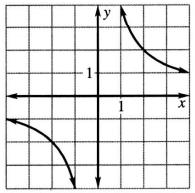
Ⓒ $\frac{x}{y} = \frac{3}{2}$ Ⓓ $x = 6y$

2. The variable z varies jointly with x and y. When $x = 5$ and $y = 2$, $z = 10$. Which equation relates x, y, and z?

Ⓐ $z = xy$ Ⓑ $z = \frac{1}{10}xy$

Ⓒ $z = \frac{x}{y}$ Ⓓ $z = 10xy$

3. Which function is graphed?



Ⓐ $4xy = 0$ Ⓑ $y = \frac{x}{4}$

Ⓒ $x = \frac{y}{4}$ Ⓓ $xy = 4$

4. What are the solutions of the equation $\frac{x}{1} = \frac{2}{x-1}$?

Ⓐ $-2, 1$ Ⓑ $2, 1$

Ⓒ $-1, 2$ Ⓓ $-1, -2$

5. What is the sum $\frac{x+1}{x} + \frac{x}{2}$?

Ⓐ $\frac{x(x+1)}{2x}$ Ⓑ $\frac{x^2+2x+2}{x+2}$

Ⓒ $\frac{x^2+x+2}{x+2}$ Ⓓ $\frac{x^2+2x+2}{2x}$

6. What is the simplified form of the complex fraction $\frac{\frac{1}{x}}{\frac{x}{x^2+1}}$?

Ⓐ $\frac{x^2+1}{x^2}$ Ⓑ $\frac{1}{x^2}$

Ⓒ 2 Ⓓ $\frac{x^2+1}{2x}$

7. What is the quotient $\frac{(x^2+5x+4)}{(x+1)} \div \frac{(x+4)}{(x+1)}$?

Ⓐ $\frac{(x+4)^2(x+1)}{(x+1)^2}$ Ⓑ $\frac{x+1}{x+4}$

Ⓒ $\frac{(x+4)^3}{(x+1)^2}$ Ⓓ $x+1$

8. What is the product $\frac{(x+1)^2}{x^3} \cdot \frac{x^2+x}{x+1}$?

Ⓐ $\frac{x^2+1}{x^2+x+1}$ Ⓑ $\frac{(x+1)^3}{(x+1)}$

Ⓒ $\frac{x^2+2x+1}{x^2}$ Ⓓ $\frac{x^2+x+1}{x^2}$

Quantitative Comparision Choose the statement that is true about the given quantities.

Ⓐ The quantity in column A is greater.

Ⓑ The quantity in column B is greater.

Ⓒ The two quantities are equal.

Ⓓ The relationship cannot be determined from the given information.

9.

Column A	*Column B*
Vertical asymptote of $y = \frac{x+1}{2x-4}$	Horizontal asymptote of $y = \frac{x+1}{2x-4}$

10.

Column A	*Column B*
The solution of $\frac{x+1}{x} = \frac{1}{2}$	The solution of $\frac{x+1}{x} = \frac{2}{1}$

CHAPTER 10

NAME _____ DATE _____

SAT/ACT Chapter Test

For use after Chapter 10

1. What conic does the equation $y = x^2$ represent?

Ⓐ circle Ⓑ ellipse
Ⓒ parabola Ⓓ hyperbola

2. What conic does the equation $\frac{x^2}{16} + \frac{y^2}{4} = 1$ represent?

Ⓐ circle Ⓑ ellipse
Ⓒ parabola Ⓓ hyperbola

3. What conic does the equation $\frac{x^2}{16} - \frac{y^2}{4} = 1$ represent?

Ⓐ circle Ⓑ line
Ⓒ hyperbola Ⓓ ellipse

4. What conic does the equation $x + y = 16$ represent?

Ⓐ circle Ⓑ line
Ⓒ hyperbola Ⓓ ellipse

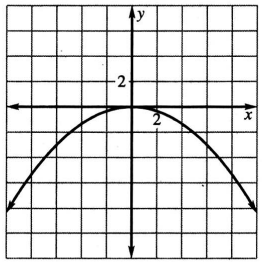
5. What conic does the equation $4x^2 + 4y^2 = 16$ represent?

Ⓐ circle Ⓑ ellipse
Ⓒ parabola Ⓓ hyperbola

6. What conic does the equation $xy = 4$ represent?

Ⓐ line Ⓑ asymptote
Ⓒ hyperbola Ⓓ circle

7. Which equation is graphed?



Ⓐ $y^2 = 12x$ Ⓑ $x^2 = -12y$
Ⓒ $x^2 = 12y$ Ⓓ $y^2 = -12x$

Quantitative Comparison **In Exercises 8–10, choose the statement that is true about the given quantities.**

Ⓐ The quantity in column A is greater.
Ⓑ The quanitity in column B is greater.
Ⓒ The two quantities are equal.
Ⓓ The relationship cannot be determined from the given information.

8.

Column A	*Column B*
The radius of the circle $x^2 + y^2 = 25$	The radius of the circle $3x^2 + 3y^2 = 75$

Ⓐ Ⓑ Ⓒ Ⓓ

9.

Column A	*Column B*
Distance between $(4, -1)$ and $(-2, 5)$	Distance between $(-3, 4)$ and $(1, -1)$

Ⓐ Ⓑ Ⓒ Ⓓ

10.

Column A	*Column B*
The discriminant of *any* ellipse or circle $(B^2 - 4AC)$	The discriminant of *any* hyperbola $(B^2 - 4AC)$

Ⓐ Ⓑ Ⓒ Ⓓ