Unit 10 Test

Circles, Parabolas, Ellipses & Hyperbolas — Standard & General Form

Name: _____ Date: _____ Score: _____ / 10

INSTRUCTIONS

For multiple-choice questions, circle the letter of the correct answer. For short-answer and problem-solving questions, show your complete work in the space provided. No calculator unless your teacher says otherwise.

1 **Identify the conic and its radius: $x^2 + y^2 = 16$** Multiple Choice

A Circle, radius 4

B Circle, radius 16

C Ellipse, radius 4

D Circle, radius 8

2 **Find the center and radius of $(x - 2)^2 + (y + 3)^2 = 25$.** Multiple Choice

A Center $(2, -3)$, radius 5

B Center $(-2, 3)$, radius 5

C Center $(2, -3)$, radius 25

D Center $(2, 3)$, radius 5

3 **Short Answer — Write the equation of a circle with center $(1, -2)$ and radius 3.** Short Answer

4 **Find the vertex of the parabola $y = (x - 3)^2 + 4$.** Multiple Choice

A $(3, 4)$

B $(-3, 4)$

C $(3, -4)$

D $(4, 3)$

5 **For the ellipse $x^2/16 + y^2/9 = 1$, find the coordinates of the foci.** Multiple Choice

A $(\pm\sqrt{7}, 0)$

B $(\pm 5, 0)$

C $(\pm 7, 0)$

D $(0, \pm\sqrt{7})$

6 **Short Answer — Find the foci of the ellipse $x^2/25 + y^2/9 = 1$.** Short Answer

7 **Identify the conic represented by $4x^2 + 9y^2 = 36$.** Multiple Choice

A Ellipse
B Circle
C Hyperbola
D Parabola

8 **Find the equations of the asymptotes of the hyperbola $x^2/9 - y^2/16 = 1$.** Multiple Choice

A $y = \pm(4/3)x$
B $y = \pm(3/4)x$
C $y = \pm(9/16)x$
D $y = \pm(16/9)x$

9 **Problem Solving — Convert $x^2 + y^2 - 6x + 4y - 3 = 0$ to standard form by completing the square, then state the center and radius.** Problem Solving

10 **Problem Solving — A hyperbola has vertices at $(\pm5, 0)$ and foci at $(\pm13, 0)$. Find its equation in standard form.** Problem Solving