Pre-Calculus **Conics Unit Extra Review**

For Questions 1–3, refer to the ellipse represented by the equation $\frac{(x-3)^2}{25} + (y-2)^2 = 1$.

1. Find the coordinates of the center.
A (2, 3) **B** (3, 2) **C** (–3, –2) **D** (–2, –3)

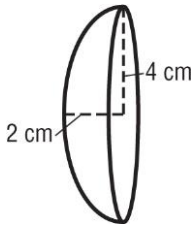
2. Find the coordinates of the foci.
F $(3, 2 \pm 2\sqrt{6})$ **G** (–2, 2) , (8, 2) **H** $(3 \pm 2\sqrt{6}, 2)$ **J** $(2 \pm 2\sqrt{6}, 3)$

3. Find the coordinates of the vertices and co-vertices.
A (8, 2) , (–2, 2) , (3, 3) , (3, 1)
B (8, 2) , (–2, 2) , (3, 7) , (3 , –3)
C (4, 2) , (2, 2) , (3, 3) , (3, 1)
D (4, 2) , (2, 2) , (3, 7) , (3, –3)

4. Use the discriminant to identify the conic section $3y^2 - 3x^2 + 12y + 18x = 42$.
F parabola **G** hyperbola **H** ellipse **J** circle

5. A cross section of the reflector shown is in the shape of a parabola. Write an equation for the cross section.

A $y^2 = 4x$
B $y^2 = 8x$
C $x^2 = 4y$
D $x^2 = 8y$



For Questions 6 and 7, refer to the hyperbola represented by $\frac{(y+2)^2}{36} - x^2 = 1$

6. Write the equations of the asymptotes.
F $y - 1 = \pm\ 6(x - 2)$
G $y = \pm\ 6x$
H $y + 2 = \pm\ 6(x - 1)$
J $y + 2 = \pm\ 6x$

7. Find the coordinates of the foci.
A $(1 \pm \sqrt{37}, -2)$ **B** $(\pm\sqrt{37}, -2)$ **C** $(6 \pm \sqrt{37}, -2)$ **D** $(0, -2 \pm \sqrt{37})$

8. Write the standard form of the equation of the hyperbola for which $a = 2$, the transverse axis is vertical, and the equations of the asymptotes are $y = \pm 2x$.

F $\frac{x^2}{4} - y^2 = 1$ **G** $y^2 - \frac{x^2}{4} = 1$ **H** $x^2 - \frac{y^2}{4} = 1$ **J** $\frac{y^2}{4} - x^2 = 1$

9. Write the standard form of the equation of the parabola with directrix at $y = -4$ and focus at (2, 2) .
F $(y-2)^2 = 12(x + 2)$
G $y + 1 = 12(x-2)^2$
H $(x+2)^2 = 12(y - 2)$
J $(x-2)^2 = 12(y + 1)$

10. Identify the graph of the equation $4x^2 - 5xy + 16y^2 - 32 = 0$.
A circle **B** ellipse **C** parabola **D** hyperbola