1. 080920b
The graph of the equation $2x^2 - 3y^2 = 4$ forms

[A] an ellipse [B] a hyperbola

[C] a parabola [D] a circle

2. 080912b
If the equation of the axis of symmetry of a parabola is $x = 2,$ at which pair of points could the parabola intersect the *x*-axis?

[A] (3,0) and (2,0) [B] (3,0) and (5,0)

[C] (3,0) and (1,0) [D] (-3,0) and (-1,0)

3. 080804b
What is the graph of the function $y = \sqrt{4 - x^2}$?

[A] the upper half of a circle whose radius is 2 and whose center is at the origin

[B] a circle whose radius is 2 and whose center is at the origin

[C] a circle whose radius is 4 and whose center is at the origin

[D] the upper half of a circle whose radius is 4 and whose center is at the origin

4. 080723a
When graphed on the coordinate plane, the equations $y = 2x^2 + 4x + 5$ and $x^2 + y^2 = 36$ form

[A] two circles [B] two parabolas

[C] a parabola and a circle

[D] a parabola and a straight line

5. 080714b
The graph of which function is symmetric with respect to the graph of the line $y = x$?

[A] $y = x^2$ [B] $y = \frac{1}{x}$

[C] $y = x^3$ [D] $y = \log x$

6. 010714a
The graph of the equation $x^2 + y^2 = r^2$ forms

[A] two intersecting lines

[B] a straight line

[C] a circle [D] a parabola

7. 080609b
A designer who is planning to install an elliptical mirror is laying out the design on a coordinate grid. Which equation could represent the elliptical mirror?

[A] $x^2 = 144 + 36y^2$ [B] $x^2 + 4y^2 = 144$

[C] $x^2 + y^2 = 144$ [D] $y = 4y^2 + 144$

8. 060616b
Which equation represents a hyperbola?

[A] $y = 16 - x^2$ [B] $y = 16x^2$

[C] $y = \frac{16}{x}$ [D] $y^2 = 16 - x^2$

9. 060613a
Which statement describes the graph of $x = 4$?

[A] It has a slope of 4.

[B] It is parallel to the *y*-axis.

[C] It passes through the point (0, 4).

[D] It is parallel to the *x*-axis.

10. 080528a
The graph of the equation $x^2 + y^2 = 4$ can be described as a

[A] circle with its center at the origin and a radius of 4

[B] circle with its center at the origin and a radius of 2

[C] line passing through points (0,2) and (2,0)

[D] parabola with its vertex at (0,2)

11. 080517b
An object orbiting a planet travels in a path represented by the equation $3(y+1)^2 + 5(x+4)^2 = 15$. In which type of pattern does the object travel?

[A] parabola [B] circle

[C] hyperbola [D] ellipse

12. 060512b
Which equation, when graphed on a Cartesian coordinate plane, would best represent an elliptical racetrack?

[A] $3x^2 - 10y^2 = 288{,}000$

[B] $3x + 10y = 288{,}000$

[C] $3x^2 + 10y^2 = 288{,}000$

[D] $30xy = 288{,}000$

13. 060414b
Which function is symmetrical with respect to the origin?

[A] $y = -\frac{5}{x}$ [B] $y = 5^x$

[C] $y = |5 - x|$ [D] $y = \sqrt{x+5}$

14. 010419b
What is the axis of symmetry of the graph of the equation $x = y^2$?

[A] y-axis [B] line $y = x$

[C] line $y = -x$ [D] x-axis

15. 080318b
A commercial artist plans to include an ellipse in a design and wants the length of the horizontal axis to equal 10 and the length of the vertical axis to equal 6. Which equation could represent this ellipse?

[A] $9x^2 + 25y^2 = 225$

[B] $9x^2 - 25y^2 = 225$

[C] $3y = 20x^2$ [D] $x^2 + y^2 = 100$

16. 060104b
Camisha is paying a band $330 to play at her graduation party. The amount each member earns, d, varies inversely as the number of members who play, n. The graph of the equation that represents the relationship between d and n is an example of

[A] an ellipse [B] a line

[C] a parabola [D] a hyperbola

[1] B

[2] C

[3] A

[4] C

[5] B

[6] C

[7] B

[8] C

[9] B

[10] B

[11] D

[12] C

[13] A

[14] D

[15] A

[16] D