

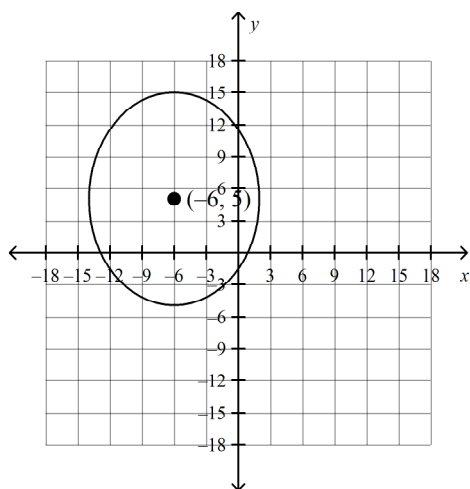
Algebra II Practice Quiz 10.2 - 10.3**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

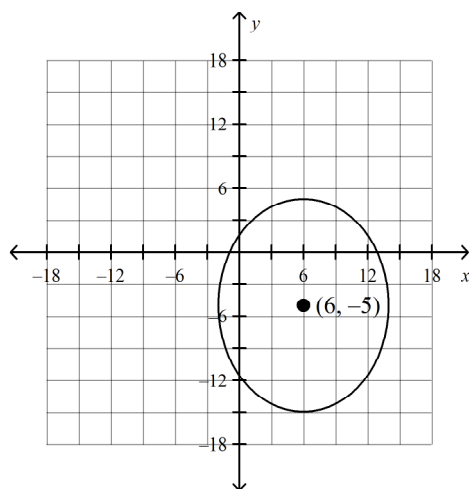
- _____ 1. (1 point) Engineers are building semi-elliptical pedestrian bridges across two highways. The larger bridge will be 1.5 times as wide and twice as tall as the smaller bridge. The equation for the bridge over the smaller highway is $\frac{x^2}{196} + \frac{y^2}{100} = 1$, measured in feet. Find the dimensions of the larger bridge. Then, find an equation for the design of the larger bridge.
- A) The width of the larger bridge is 42 feet and the height is 20 feet.
 $\frac{x^2}{441} + \frac{y^2}{400} = 1$
- B) The width of the larger bridge is 56 feet and the height is 15 feet.
 $\frac{x^2}{784} + \frac{y^2}{225} = 1$
- C) The width of the larger bridge is 21 feet and the height is 20 feet.
 $\frac{x^2}{441} + \frac{y^2}{400} = 1$
- D) The width of the larger bridge is 30 feet and the height is 28 feet.
 $\frac{x^2}{225} + \frac{y^2}{784} = 1$
- _____ 2. (1 point) The path that a satellite travels around Earth is an ellipse with Earth at one focus. The length of the major axis is about 16,000 km, and the length of the minor axis is about 12,000 km. Write an equation for the satellite's orbit.
- A) $\frac{x^2}{6000^2} + \frac{y^2}{8000^2} = 1$
- B) $\frac{x^2}{8000^2} + \frac{y^2}{6000^2} = 1$
- C) $\frac{x^2}{16000^2} - \frac{y^2}{12000^2} = 1$
- D) $\frac{x^2}{8000^2} - \frac{y^2}{6000^2} = 1$

_____ 3. (1 point) Graph the ellipse $\frac{(x-6)^2}{100} + \frac{(y+5)^2}{64} = 1$.

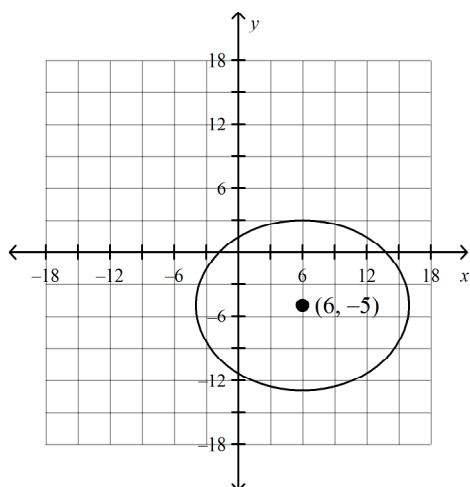
A)



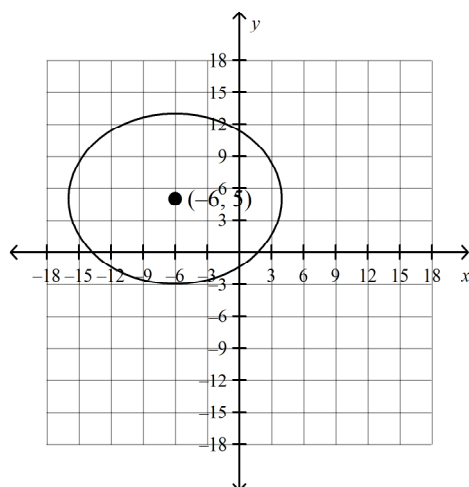
C)



B)



D)



_____ 4. (1 point) Write the equation of a circle with center (8, 7) and radius $r = 6$.

A) $36 = (x-8)^2 + (y-7)^2$

C) $6 = (x-8) + (y-7)$

B) $6 = (x-8)^2 + (y-7)^2$

D) $36 = (x-7)^2 + (y-8)^2$

_____ 5. (1 point) Write the equation of the circle with center (2, 4) and containing the point (-2, 1).

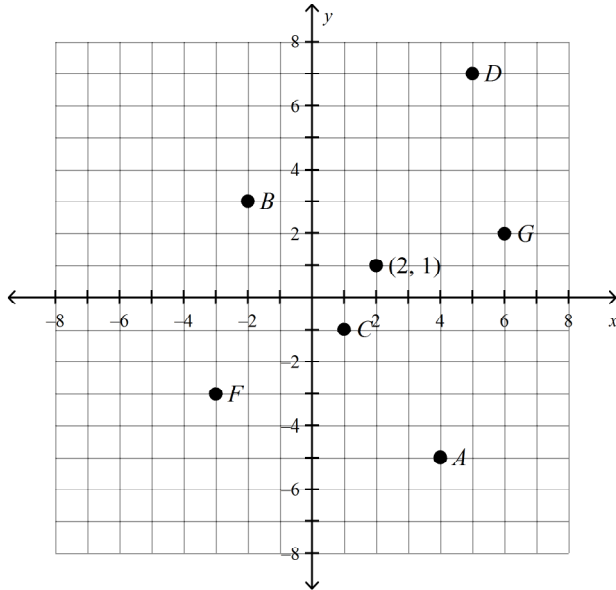
A) $(x+2)^2 + (y-1)^2 = 25$

C) $(x-2)^2 + (y-4)^2 = 5$

B) $(x-2)^2 + (y-4)^2 = 25$

D) $(x+2)^2 + (y-1)^2 = 5$

- _____ 6. (1 point) Sandra and her friends want to walk to the store. They only visit stores that are less than 500 yards away from Sandra's house. Sandra's house is at the point $(2, 1)$, the letters represent all of the local stores, and each unit represents 100 yards. Use the equation of a circle to find the number of stores that are within 500 yards of Sandra's house.

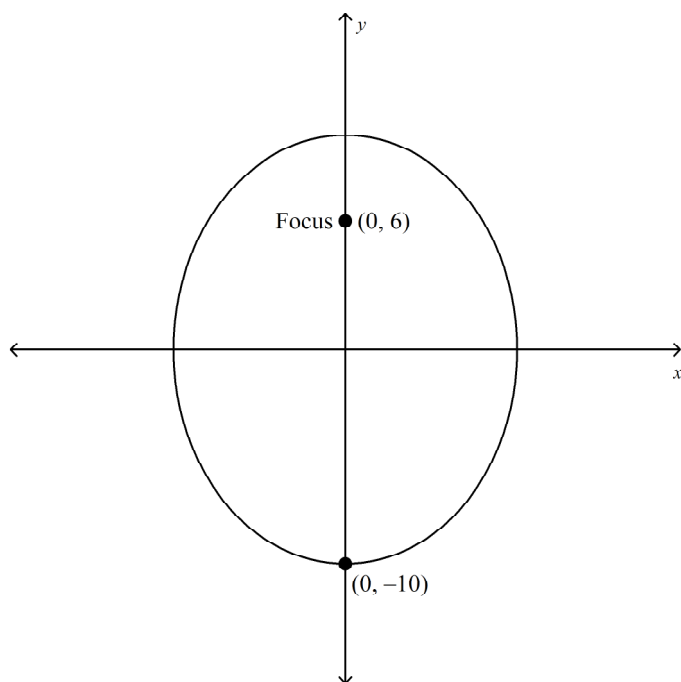


- A) 2 stores
B) 3 stores
C) 4 stores
D) 5 stores
- _____ 7. (1 point) Write the equation of the line that is tangent to the circle $25 = x^2 + y^2$ at the point $(3, 4)$.
- A) $\frac{x}{3} + \frac{y}{4} = 25$
B) $y = \frac{3}{4}x + \frac{25}{4}$
C) $y = -\frac{3}{4}x + \frac{25}{4}$
D) $(3y)(4x) = 5$
- _____ 8. (1 point) The lines $y = -2x + 1$ and $y = 5x + 22$ each contain diameters of a particular circle. If the point $(5, 11)$ is on the circle, find the equation of the circle.
- A) $(x - 5)^2 + (y - 11)^2 = 146$
B) $(x - 3)^2 + (y + 7)^2 = 328$
C) $(x - 3)^2 + (y - 23)^2 = 148$
D) $(x + 3)^2 + (y - 7)^2 = 80$
- _____ 9. (1 point) Find the constant sum for an ellipse with foci $F_1(0, -3)$ and $F_2(0, 3)$ and the point on the ellipse $P(10, 0)$.
- A) $2\sqrt{109}$
B) 218
C) $\sqrt{109}$
D) 109

Name: _____

ID: A

____ 10. (1 point) Write an equation in standard form for the ellipse shown with center $(0, 0)$.



A) $\frac{x^2}{10} + \frac{y^2}{8} = 1$

B) $\frac{y^2}{10} + \frac{x^2}{8} = 1$

C) $\frac{x^2}{100} + \frac{y^2}{64} = 1$

D) $\frac{y^2}{100} + \frac{x^2}{64} = 1$

Algebra II Practice Quiz 10.2 - 10.3
Answer Section**MULTIPLE CHOICE**

- | | | |
|------------|--------|---------------|
| 1. ANS: A | PTS: 1 | REF: Page 739 |
| 2. ANS: B | PTS: 1 | |
| 3. ANS: B | PTS: 1 | REF: Page 738 |
| 4. ANS: A | PTS: 1 | REF: Page 729 |
| 5. ANS: B | PTS: 1 | REF: Page 730 |
| 6. ANS: B | PTS: 1 | |
| 7. ANS: C | PTS: 1 | REF: Page 731 |
| 8. ANS: D | PTS: 1 | |
| 9. ANS: A | PTS: 1 | REF: Page 736 |
| 10. ANS: D | PTS: 1 | REF: Page 737 |