Name:_____ Class:_____ Date:_____

Precalculus_G11_Ch7_Test

Indicate the answer choice that best completes the statement or answers the question.

1. Write the equation for the hyperbola with foci $(1,-5)$, $(9,-5)$ and conjugate axis of length 6.

a. $\frac{(x-5)^2}{7} - \frac{(y+5)^2}{9} = 1$

b. $\frac{(y+5)^2}{7} - \frac{(x-5)^2}{9} = 1$

c. $\frac{(x-5)^2}{9} - \frac{(y+5)^2}{7} = 1$

d. $\frac{(y+5)^2}{9} - \frac{(x-5)^2}{7} = 1$

2. Write the equation for the hyperbola with foci $(6,-2)$, $(-3,-2)$ and conjugate axis of length 6.

a. $\frac{(x-1.5)^2}{9} - \frac{(y+2)^2}{11.25} = 1$

b. $\frac{(y+2)^2}{11.25} - \frac{(x-1.5)^2}{9} = 1$

c. $\frac{(x-1.5)^2}{11.25} - \frac{(y+2)^2}{9} = 1$

d. $\frac{(y+2)^2}{9} - \frac{(x-1.5)^2}{11.25} = 1$

3. Determine the orientation of the parabola.

directrix: $x = -3$; $p = 4$

a. opens down
b. opens right
c. opens up
d. opens left

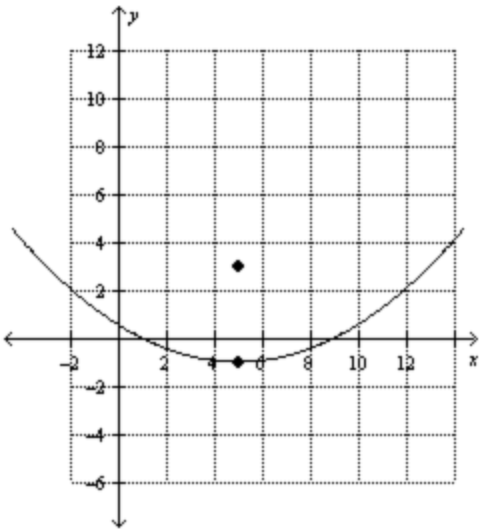
4. Use $\theta = 60°$ to write $3x^2 + 2y^2 - 4x - 2y = 44$ in the $x'y'$-plane. Then identify the conic.

a. $7(x')^2 + 10\sqrt{3}x'y' - 4(y')^2 + (4 - 8\sqrt{3})x' + (8 - 4\sqrt{3})y' - 176 = 0$; ellipse
b. $7(x')^2 + 10\sqrt{3}x'y' - 4(y')^2 + (4 - 8\sqrt{3})x' + (8 - 4\sqrt{3})y' - 176 = 0$; parabola
c. $9(x')^2 + 10\sqrt{3}x'y' + 11(y')^2 + (-8 - 4\sqrt{3})x' + (-4 - 8\sqrt{3})y' - 176 = 0$; parabola
d. $9(x')^2 + 10\sqrt{3}x'y' + 11(y')^2 + (-8 - 4\sqrt{3})x' + (-4 - 8\sqrt{3})y' - 176 = 0$; ellipse

Name:_____ Class:_____ Date:_____

Precalculus_G11_Ch7_Test

5. Identify the equation of the graph shown.



a. $(x-5)=16(y+1)^2$ b. $(x+1)^2=16(y-5)$

c. $(x-5)^2=16(y+1)$ d. $(x-5)^2=4(y+1)$

6. Write the equation for the hyperbola with foci $(9,2)$, $(9,20)$and vertices $(9,8)$, $(9,14)$.

a. $\frac{(y-11)^2}{9}+\frac{(x-9)^2}{72}=1$ b. $\frac{(y-11)^2}{3}-\frac{(x-9)^2}{8.49}=1$

c. $\frac{(x-9)^2}{9}-\frac{(y-11)^2}{72}=1$ d. $\frac{(y-11)^2}{9}-\frac{(x-9)^2}{72}=1$

7. A discus is thrown from a height of 3 feet with an initial velocity of 55 ft/s at an angle of 44° with the horizontal. How long will it take for the discus to reach the ground?

a. 2.5 seconds b. 18.3 seconds

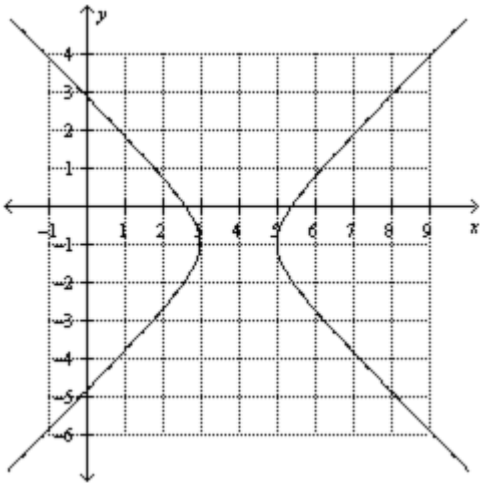
c. 0.8 second d. 2.6 seconds

Name:_____ Class:_____ Date:_____

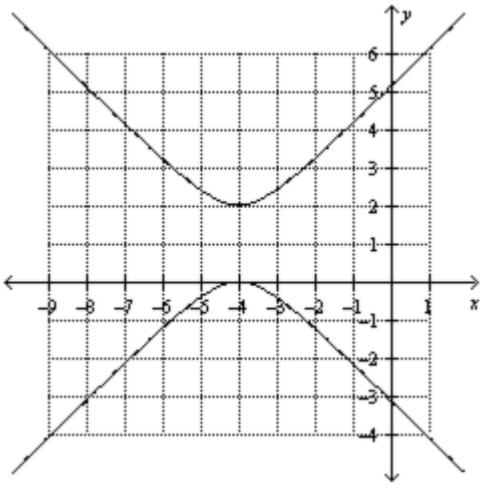
Precalculus_G11_Ch7_Test

8. Graph the hyperbola given by $x^2 - y^2 + 8x + 2y + 14 = 0$.

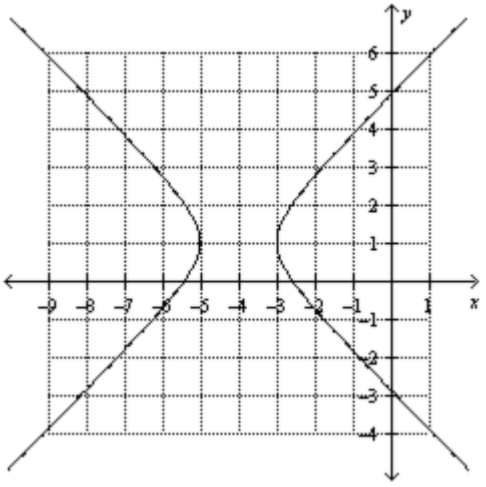
a.



b.



c.



d. This graph will not form a hyperbola.

9. Write the equation of the ellipse $4x^2 + 9y^2 - 72x + 108y + 612 = 0$ in standard form.

a. $\frac{(x-9)^2}{9} + \frac{(y-6)^2}{4} = 1$

b. $\frac{(x-9)^2}{4} + \frac{(y+6)^2}{9} = 1$

c. $(x-9)^2 + (y+6)^2 = 36$

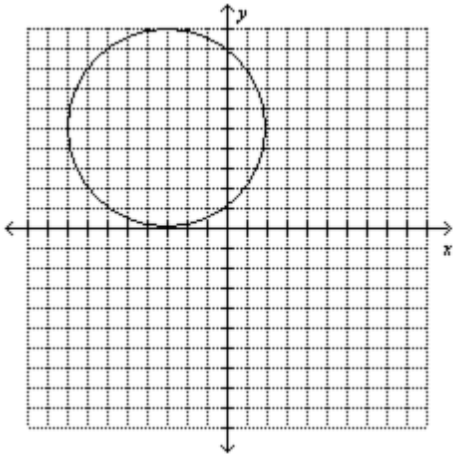
d. $\frac{(x-9)^2}{9} + \frac{(y+6)^2}{4} = 1$

Name:_____ Class:_____ Date:_____

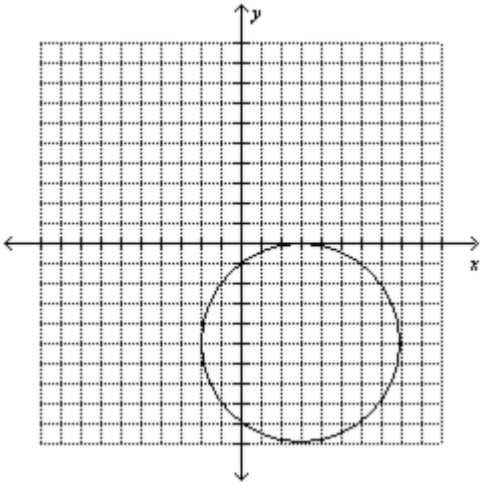
Precalculus_G11_Ch7_Test

10. Sketch the graph of $(x+3)^2+(y-5)^2=25$.

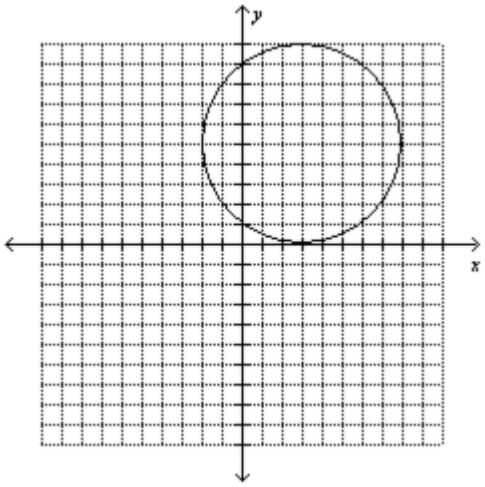
a.



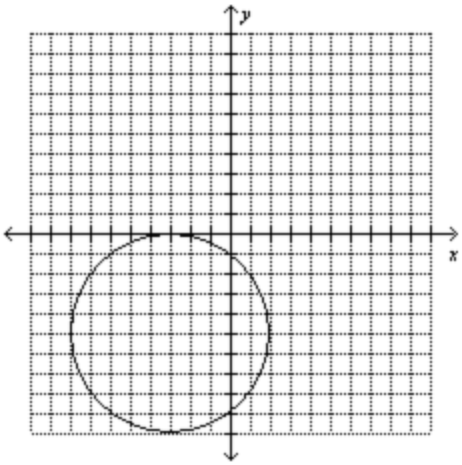
b.



c.



d.



11. Write the equation for the hyperbola with foci $(6,-5)$, $(-4,-5)$ and conjugate axis of length 9.

a. $\dfrac{(x-1)^2}{4.75}-\dfrac{(y+5)^2}{20.25}=1$

b. $\dfrac{(y+5)^2}{4.75}-\dfrac{(x-1)^2}{20.25}=1$

c. $\dfrac{(y+5)^2}{20.25}-\dfrac{(x-1)^2}{4.75}=1$

d. $\dfrac{(x-1)^2}{20.25}-\dfrac{(y+5)^2}{4.75}=1$

Name:_____ Class:_____ Date:_____

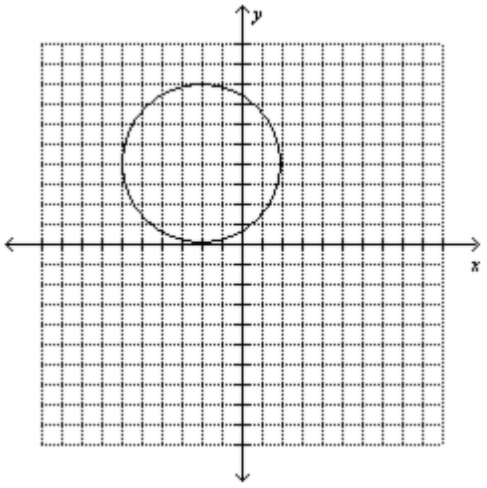
Precalculus_G11_Ch7_Test

12. Write an equation for the conic in the *xy*-plane for $\frac{(x')^2}{15} - \frac{(y')^2}{6} = 1$ at $\theta = 30°$.

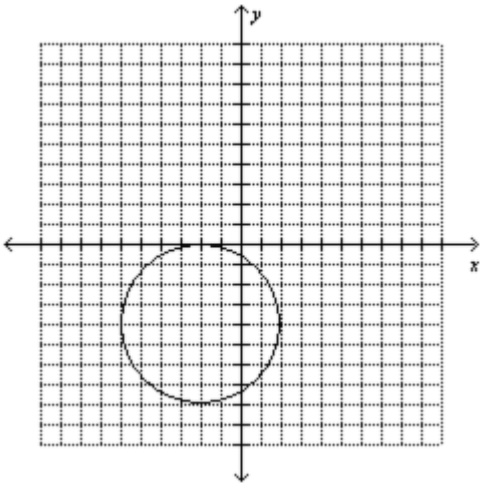
a. $3x^2 + 42\sqrt{3}xy - 39y^2 - 360 = 0$
b. $-39x^2 + 42\sqrt{3}xy + 3y^2 - 360 = 0$
c. $3x^2 - 12\sqrt{3}xy - 39y^2 - 360 = 0$
d. $-9x^2 + 42\sqrt{3}xy - 9y^2 - 180 = 0$

13. Sketch the graph of $(x-2)^2 + (y+4)^2 = 16$.

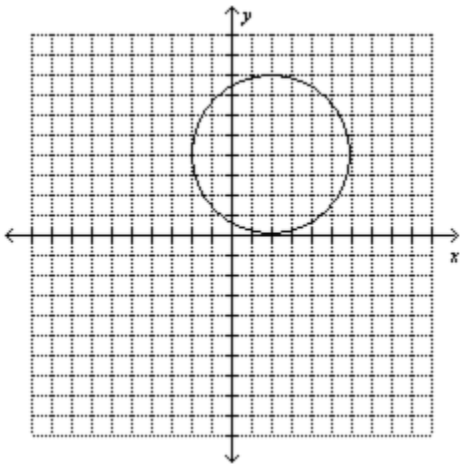
a.



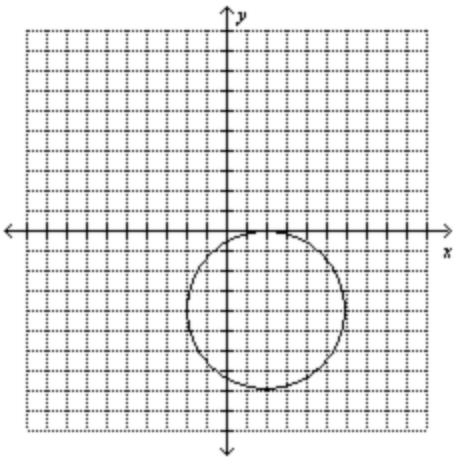
b.



c.



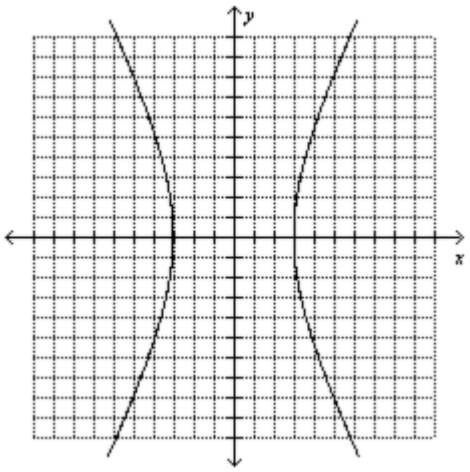
d.



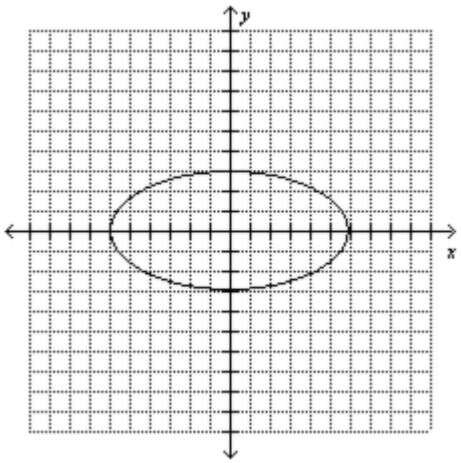
Precalculus_G11_Ch7_Test

14. Graph $\frac{x^2}{36} - \frac{y^2}{9} = 1$.

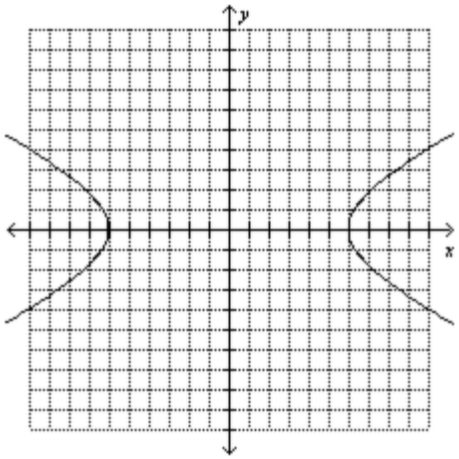
a.



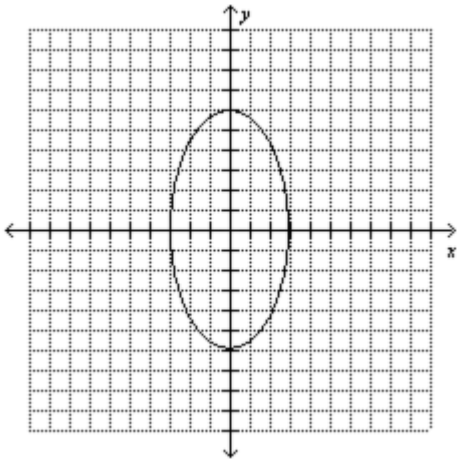
b.



c.



d.



15. Write each pair of parametric equations in rectangular form. Then state the restriction on the domain.

$x = \sqrt{t + 5} - 3$
$y = 4t + 8$

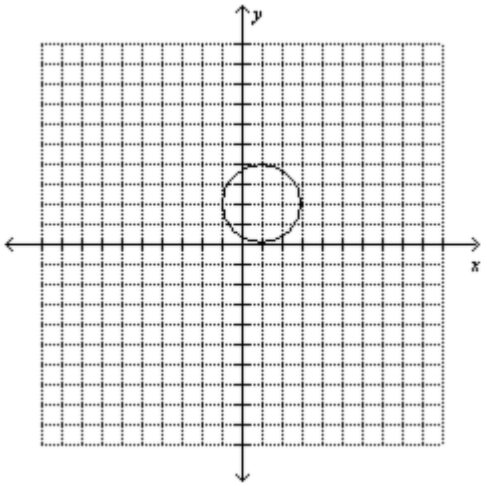
a. $y = 4x^2 + 24x + 24; x \geq -3$
b. $y = 4x^2 + 24x + 24; x \geq -5$
c. $y = 4x^2 + 24x - 24; x \geq 3$
d. $y = 4x^2 - 24x + 24; x \geq -3$

Name:_____ Class:_____ Date:_____

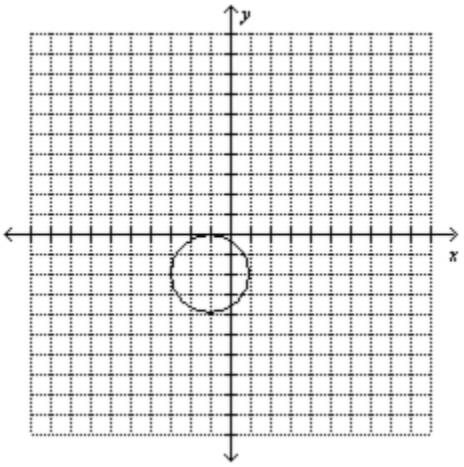
Precalculus_G11_Ch7_Test

16. Sketch the graph of $(x+1)^2+(y-2)^2=4$.

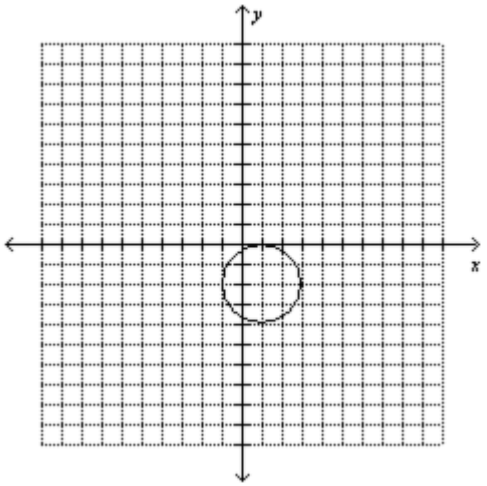
a.



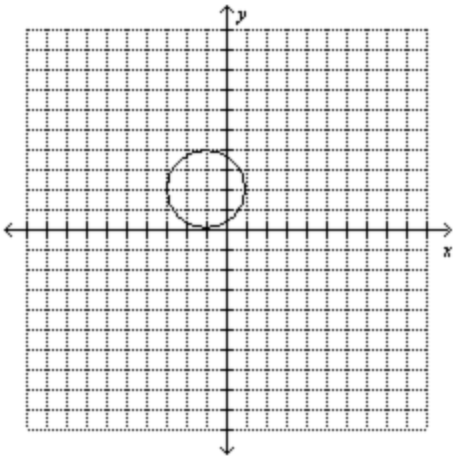
b.



c.



d.



17. Determine the orientation of the parabola.

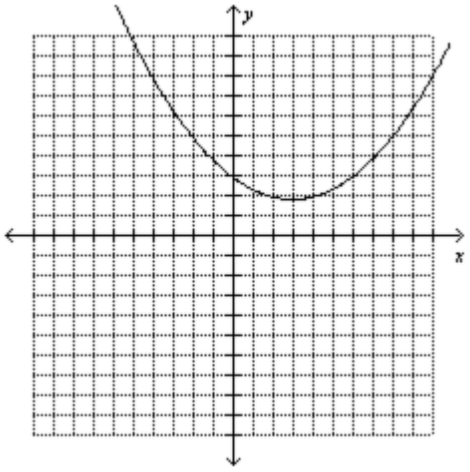
directrix: $x=-5;\ p=2$

a. opens down
b. opens left
c. opens up
d. opens right

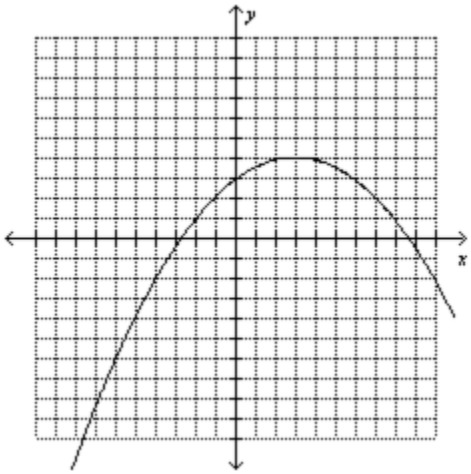
Precalculus_G11_Ch7_Test

18. Graph $x^2 - 6x - 8y - 23 = 0$.

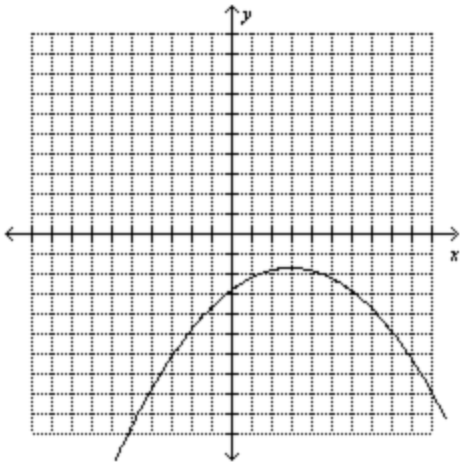
a.



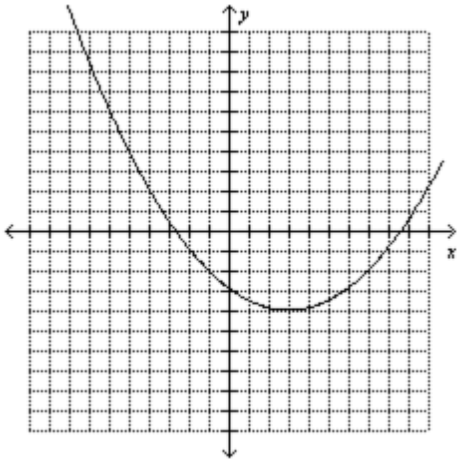
b.



c.



d.



19. Identify the conic given by $\frac{(x-8)^2}{9} + \frac{(y-8)^2}{25} = 1$

a. circle b. hyperbola
c. ellipse d. parabola

20. A rock is tossed at an initial velocity of 60 m/s at an angle of 10° with the ground. After 0.9 second, how far has the rock traveled horizontally and vertically?

a. 9.4 m horizontally and 40.2 m vertically
b. 53.2 m horizontally and 5.4 m vertically
c. 53.2 m horizontally and 3.6 m vertically
d. 8.9 m horizontally and 2.4 m vertically

==========