



Assessment Guide

Analytic Geometry





Analytic Geometry Formula Sheet

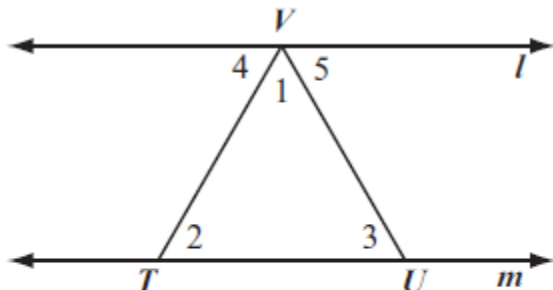
Below are the formulas you may find useful as you work the problems. However, some of the formulas may not be used. You may refer to this page as you take the test.

<p style="text-align: center;">Area</p> <p>Rectangle/Parallelogram $A = bh$</p> <p>Triangle $A = \frac{1}{2}bh$</p> <p>Circle $A = \pi r^2$</p>	<p style="text-align: center;">Quadratic Equations</p> <p>Standard Form: $y = ax^2 + bx + c$</p> <p>Vertex Form: $y = a(x - h)^2 + k$</p>
<p style="text-align: center;">Circumference</p> <p>$C = \pi d$ $\pi = 3.14$</p> <p>$C = 2\pi r$</p>	<p style="text-align: center;">Quadratic Formula</p> $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
<p style="text-align: center;">Volume</p> <p>Rectangular Prism/Cylinder $V = Bh$</p> <p>Pyramid/Cone $V = \frac{1}{3}Bh$</p> <p>Sphere $V = \frac{4}{3}\pi r^3$</p>	<p style="text-align: center;">Conic Sections</p> <p>Parabola: $y - k = \frac{1}{4p}(x - h)^2$</p> $x - h = \frac{1}{4p}(y - k)^2$ <p>Circle: $(x - h)^2 + (y - k)^2 = r^2$</p>
<p style="text-align: center;">Surface Area</p> <p>Rectangular Prism $SA = 2lw + 2wh + 2lh$</p> <p>Cylinder $SA = 2\pi r^2 + 2\pi rh$</p> <p>Sphere $SA = 4\pi r^2$</p>	<p style="text-align: center;">Distance Formula</p> $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
<p style="text-align: center;">Trigonometric Relationships</p> $\sin(\theta) = \frac{\text{opp}}{\text{hyp}}; \cos(\theta) = \frac{\text{adj}}{\text{hyp}}; \tan(\theta) = \frac{\text{opp}}{\text{adj}}$	<p style="text-align: center;">Conditional Probability</p> $P(A B) = \frac{P(A \text{ and } B)}{P(B)}$

Georgia Milestones Analytic Geometry EOC Assessment Guide

Item 1

In this figure, $l \parallel m$. Jessie listed the first two steps in a proof that $\angle 1 + \angle 2 + \angle 3 = 180^\circ$.



	Step	Justification
1	$\angle 2 \cong \angle 4$?
2	$\angle 3 \cong \angle 5$?

Which justification can Jessie give for Steps 1 and 2?

- A Alternate interior angles are congruent.
- B Corresponding angles are congruent.
- C Vertical angles are congruent.
- D Alternate exterior angles are congruent.

Item 2

This table defines a function with x -values making up the domain and y -values making up the range.

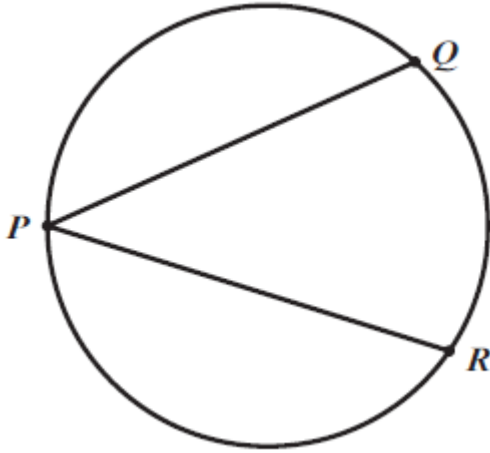
x	y
-2	0
0	4
3	-5
5	-21

Which equation describes the function?

- A $y = -x^2 + 4$
- B $y = -x^2 + 4x$
- C $y = 4x^2 - 1$
- D $y = 4x^2 - 4$

Item 3

In this circle, $m\widehat{QR} = 72^\circ$.



What is $m\angle QPR$?

- A 18°
- B 24°
- C 36°
- D 72°

Item 4

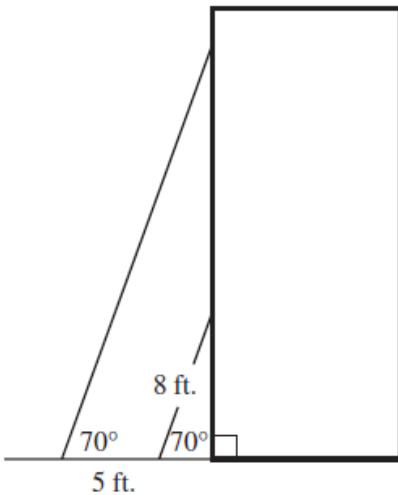
Which of these expressions has a real number value?

- A $\frac{1}{i}$
- B $-i$
- C \sqrt{i}
- D i^2

Item 5

This diagram shows two ladders leaning against a building. Each ladder is leaning at an angle of 70 degrees.

- The length of the short ladder is 8 feet.
- The base of the long ladder is 5 feet farther from the base of the building than the base of the short ladder is.



What is the length, to the nearest foot, of the long ladder?

$$\begin{bmatrix} \sin 70^\circ = 0.9397 \\ \cos 70^\circ = 0.3420 \\ \tan 70^\circ = 2.7475 \end{bmatrix}$$

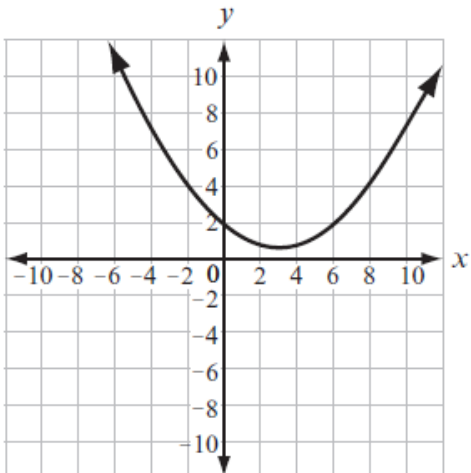
- A 10 ft.
- B 13 ft.
- C 23 ft.
- D 26 ft.

Georgia Milestones Analytic Geometry EOC Assessment Guide

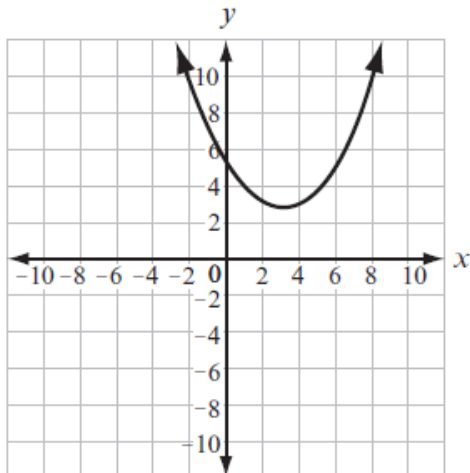
Item 6

Which coordinate plane shows the graph of a parabola that has a focus at $(3, 3)$ and a directrix of $y = -1$?

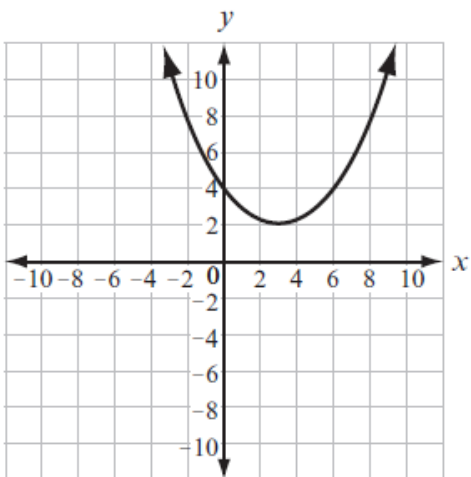
A



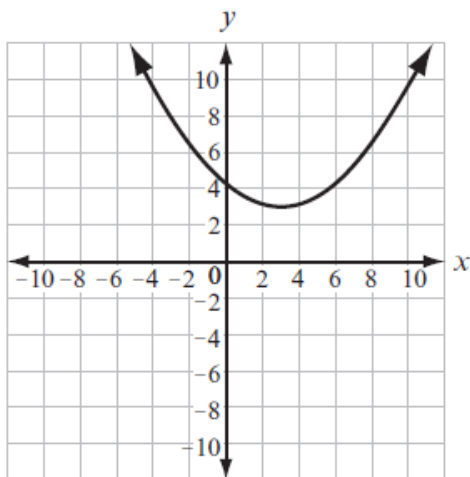
B



C



D



Georgia Milestones Analytic Geometry EOC Assessment Guide

Item 7

Use these functions to answer this question.

$$P(x) = x^2 - x - 6$$

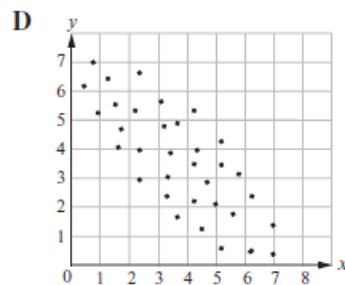
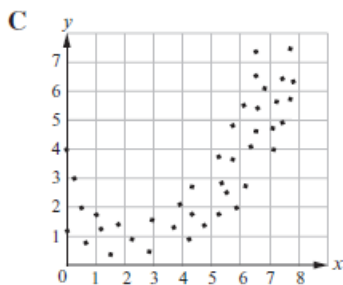
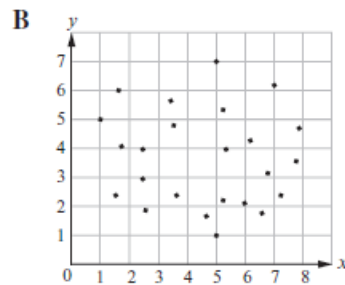
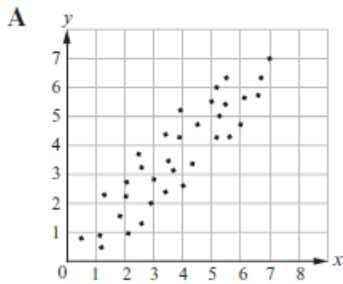
$$Q(x) = x - 3$$

What is $P(x) - Q(x)$?

- A $x^2 - 3$
- B $x^2 - 9$
- C $x^2 - 2x - 3$
- D $x^2 - 2x - 9$

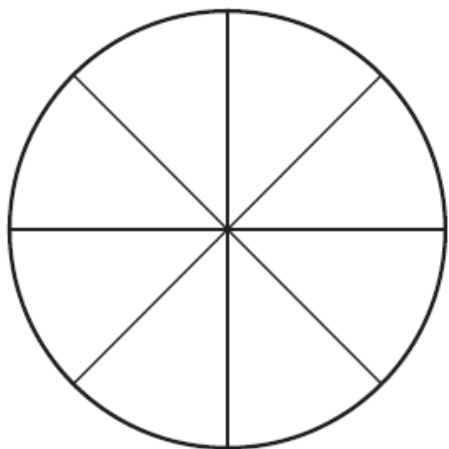
Item 8

Which set of data could be BEST modeled by a quadratic function?



Item 9

Billy is creating a circular garden divided into 8 equal sections. The diameter of the garden is 12 feet.



What is the area of one section of the garden? Explain how you determined your answer.

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Georgia Milestones Analytic Geometry EOC Assessment Guide

Item 10

Jane and Mark each build ramps to jump their remote-controlled cars.

Both ramps are right triangles when viewed from the side. The incline of Jane's ramp makes a 30-degree angle with the ground, and the length of the inclined ramp is 14 inches. The incline of Mark's ramp makes a 45-degree angle with the ground, and the length of the inclined ramp is 10 inches.

Part A: What is the horizontal length of the base of Jane's ramp and the base of Mark's ramp? Show or explain your work.

Part B: Which car is launched from the highest point? Justify your answer by showing or explaining your work.
