Class Name : **Lacoste College Algebra Fall 2019**

Student Name : _____

Instructor Name : **Master Templates**

Instructor Note : **This represents the other half of the questions that might be on Exam 2.**

Question 1 of 36

Multiply and simplify.

$(\sqrt{x}+\sqrt{5})^2=$ ☐

$(\sqrt{x}+2\sqrt{5})(\sqrt{x}-2\sqrt{5})=$ ☐

Question 2 of 36

Use the quadratic formula to solve for x.

$$5x^2+9x=-2$$

Round your answer to the nearest hundredth.

Question 3 of 36

Solve for v.

$$|4v+6|=14$$

Question 4 of 36

Solve for y.

$$3|y+8|-48=-12$$

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Question 5 of 36

Solve for v, where v is a real number.

$$\sqrt{8v+1}=\sqrt{4v+9}$$

Question 6 of 36

Solve for x, where x is a real number.

$$\sqrt{4x-7}-\sqrt{2x-4}=1$$

Question 7 of 36

Solve the inequality for v.

$$9<-\frac{5}{9}v-1$$

Simplify your answer as much as possible.

Question 8 of 36

Solve the inequality for w.

$$-\frac{3}{4}w-1>\frac{5}{6}w+\frac{7}{4}$$

Simplify your answer as much as possible.

Question 9 of 36

Solve the compound inequality.

$$4y+4\leq 24 \quad \text{or} \quad 3y+5<11$$

Write the solution in interval notation.
If there is no solution, enter $\varnothing$.

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Question 10 of 36

Write an absolute value inequality for the graph below.
Use x for your variable.

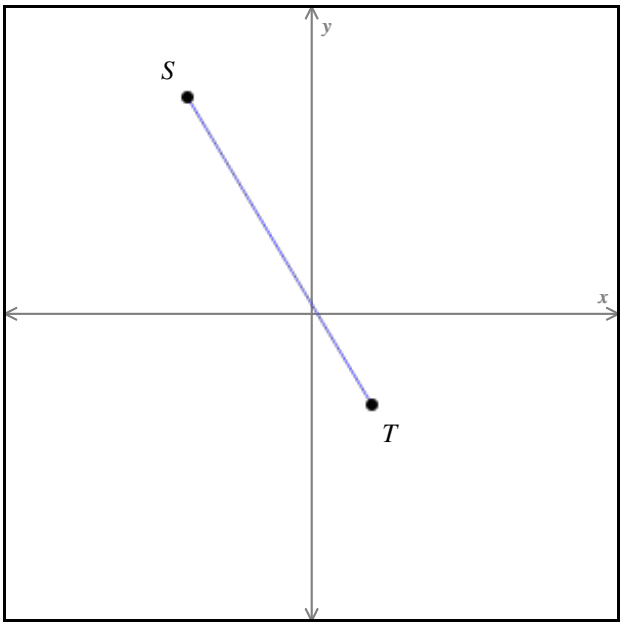
Question 11 of 36

Solve.

$$4\left|v+2\right|+6>26$$

Question 12 of 36

Find the midpoint M of the line segment joining the points $S = (-4, 7)$ and $T = (2, -3)$.



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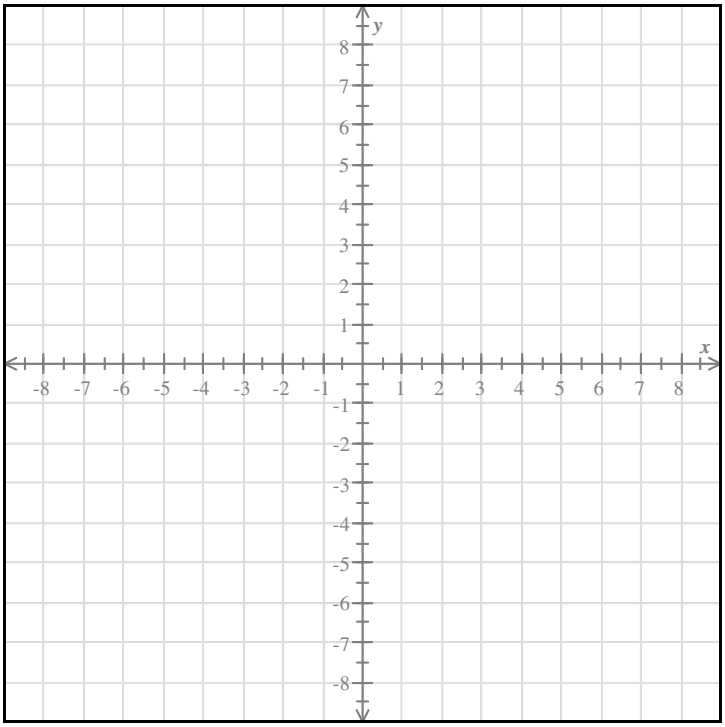
Question 13 of 36

The equation of a circle is given below. Identify the radius and the center. Then graph the circle.

$$x^2+y^2+6x-2y+1=0$$

Radius: _____

Center: (_____, _____)



Question 14 of 36

Give the equation of the circle centered at the origin and passing through the point $(0, -3)$.

Question 15 of 36

Find an equation of the circle that has center $(6, -2)$ and passes through $(1, 3)$.

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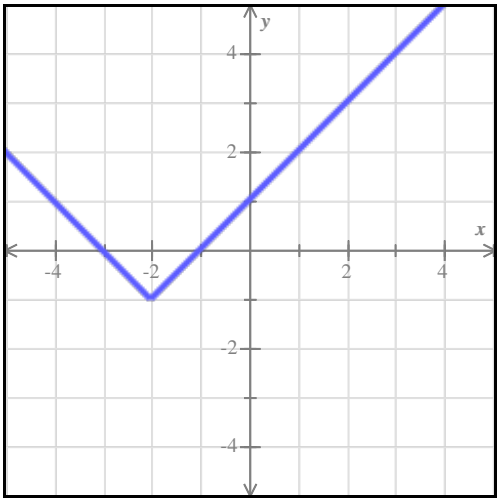
Question 16 of 36

The graph of a function is given below.

Give all y-intercepts and x-intercepts shown.



If there is more than one answer, separate them with commas.

y-intercept(s):

x-intercept(s):

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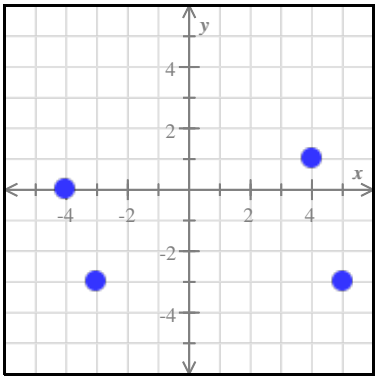
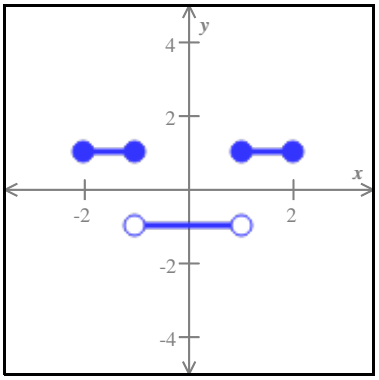
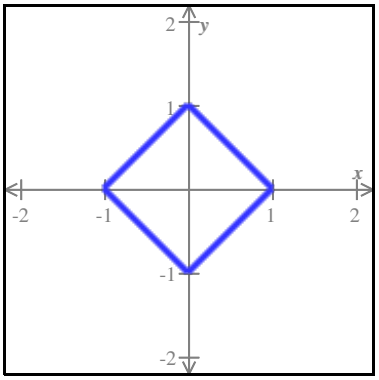
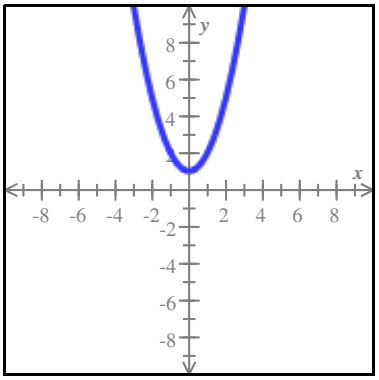
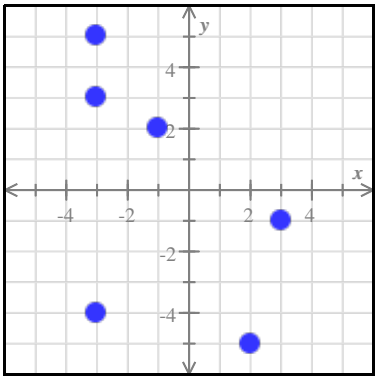
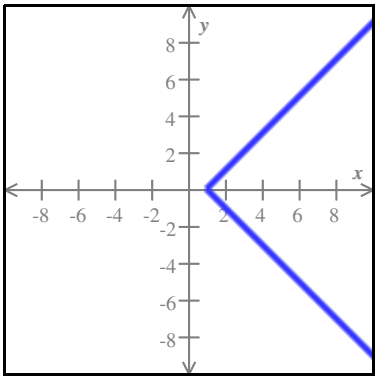
Question 17 of 36

For each graph below, state whether it represents a function.

Function?	Graph 1  ○ Yes ○ No	Graph 2  ○ Yes ○ No	Graph 3  ○ Yes ○ No
Function?	Graph 4  ○ Yes ○ No	Graph 5  ○ Yes ○ No	Graph 6  ○ Yes ○ No

Question 18 of 36

The function f is defined as follows.

$$f(x)=\frac{x^2+6x-16}{x^2-5x-14}$$

Find $f(3)$.

Simplify your answer as much as possible.

Question 19 of 36

The function f is defined by $f(x)=x^2+6$.

Find $f(3a)$.

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Question 20 of 36

Suppose that the relation T is defined as follows.

$$T = \{(4, 5), (4, -4), (-6, -6)\}$$

Give the domain and range of T.
Write your answers using set notation.

Question 21 of 36

The functions f and g are defined as follows.

$$f(x) = \frac{x-2}{x^2+x-6}$$

$$g(x) = \frac{x}{x^2+1}$$

For each function, find the domain.

Write each answer as an interval or union of intervals.

Question 22 of 36

Find the domain of the function.

$$f(x) = \frac{\sqrt{10+x}}{7-2x}$$

Write your answer as an interval or union of intervals.

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Question 23 of 36

For each of the following, determine whether the equation defines y as a function of x.

$7\left\|x\right\|+y=9$ ◦ Function ◦ Not a function
$x=\frac{9}{y}$ ◦ Function ◦ Not a function
$x^2+\left\|y\right\|=16$ ◦ Function ◦ Not a function
$5x=y^2$ ◦ Function ◦ Not a function

Question 24 of 36

Chris spends $\$16$ each time he travels the toll roads. He started the month with $\$256$ in his toll road account. The amount, A (in dollars), that he has left in the account after t trips on the toll roads is given by the following function.

$$A(t)=256-16t$$

Answer the following questions.

(a) How much money does Chris have left in the account after 11 trips on the toll roads?

$\$$_____

(b) How many trips on the toll roads can he take until his account is empty?

_____ trips

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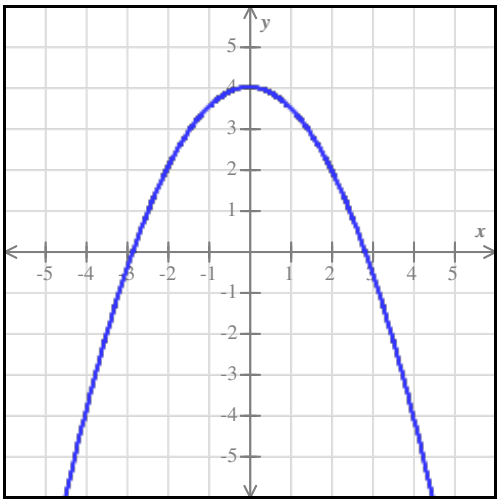
Question 25 of 36

The graph of a function f is shown below.

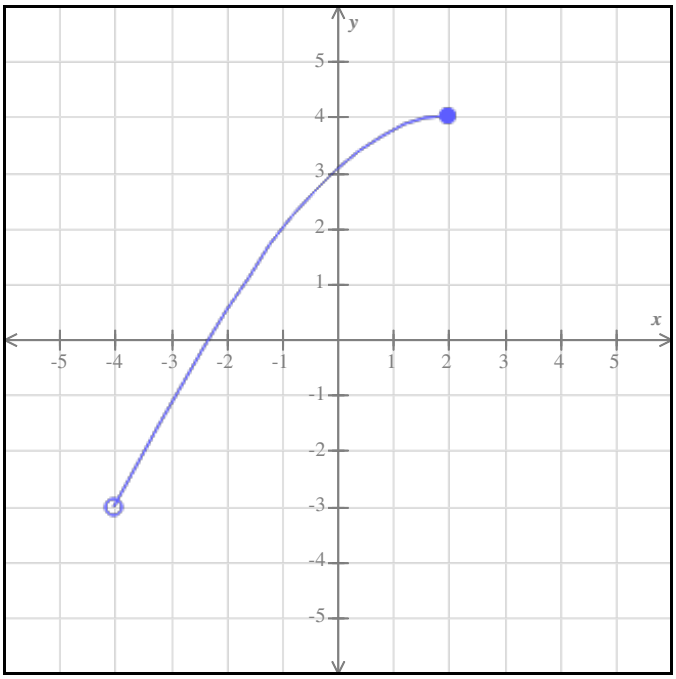
Find $f(-2)$ and find one value of x for which $f(x) = 4$.



Question 26 of 36

The entire graph of the function g is shown in the figure below.

Write the domain and range of g using interval notation.



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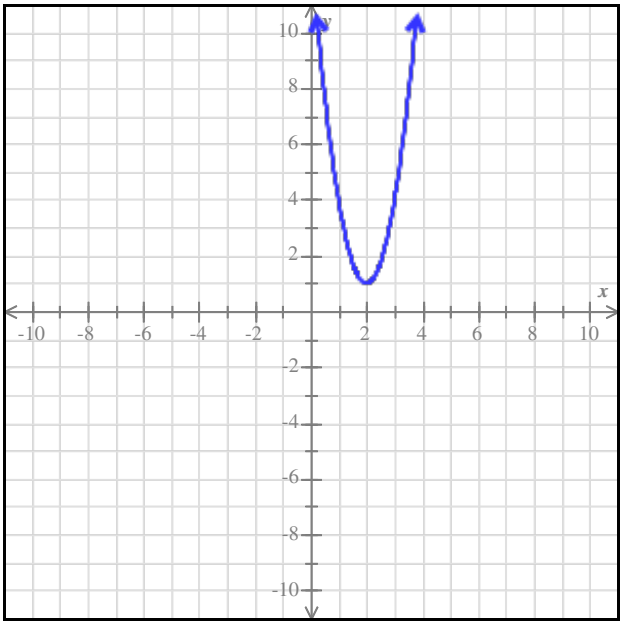
Question 27 of 36

The graph of a quadratic function with vertex $(2, 1)$ is shown in the figure below.
Find the domain and the range.



Write the domain and range using interval notation.

domain = _____

range = _____

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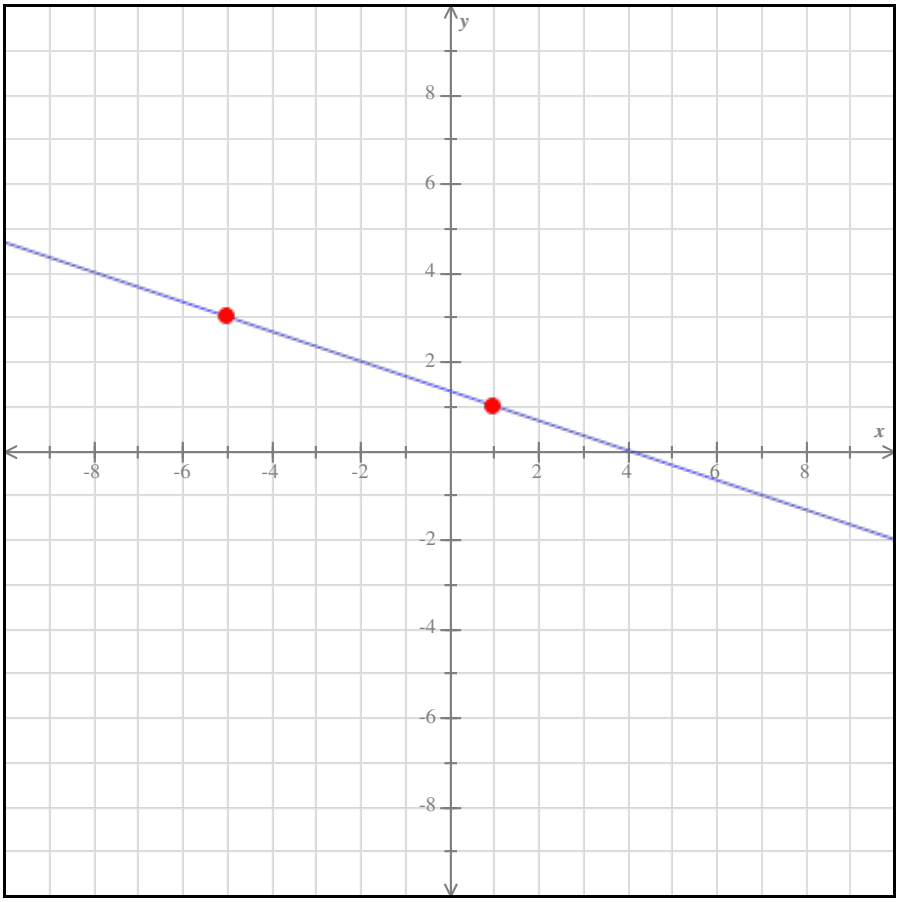
Question 28 of 36

Find an equation for the line below.



Question 29 of 36

Find the average rate of change of $f(x) = -3x^2 - 5x$ from $x = 2$ to $x = 7$.

Simplify your answer as much as possible.

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Question 30 of 36

Keisha launches a rocket straight up into the air. The table below gives the height $H\,(t)$ of the rocket (in meters) at a few times t (in seconds) during its flight.

Time t (seconds)	Height $H\,(t)$ (meters)
0	0
2.2	110
6.6	198
8.8	44
13.2	0

(a) Find the average rate of change for the height from 0 seconds to 6.6 seconds.
_____ meters per second
(b) Find the average rate of change for the height from 8.8 seconds to 13.2 seconds.
_____ meters per second

Question 31 of 36

A line passes through the point $(4,\,-4)$ and has a slope of $-\frac{3}{2}$.

Write an equation in point-slope form for this line.

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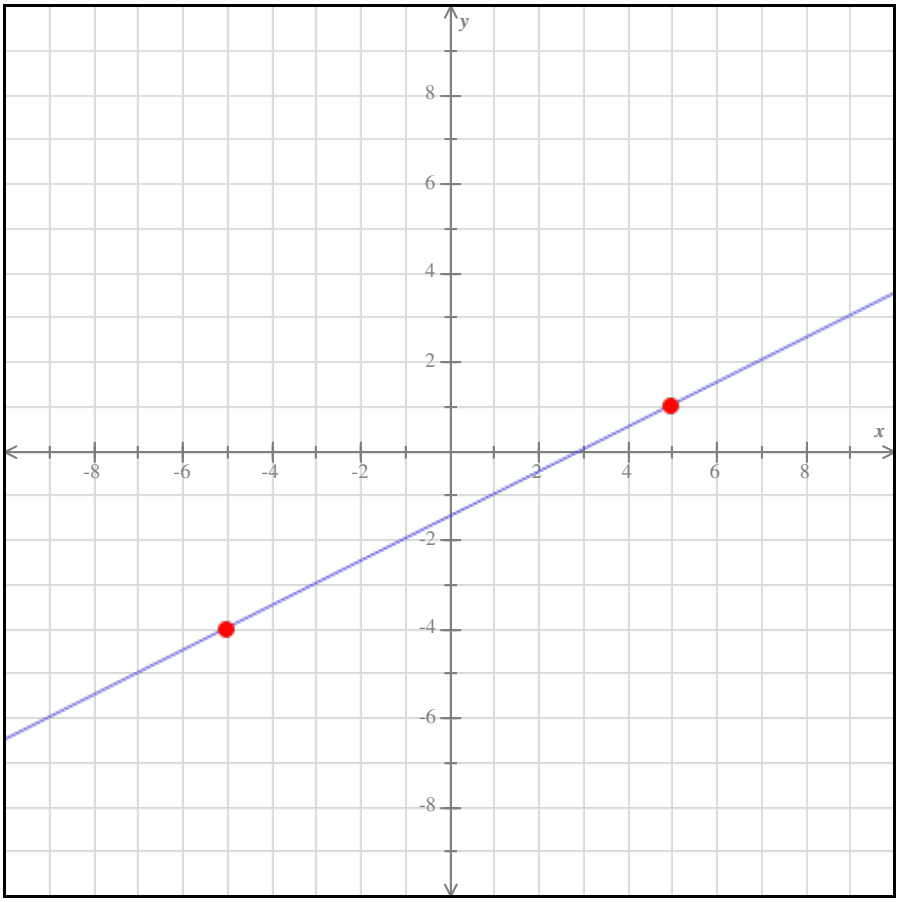
Question 32 of 36

Find an equation for the line below.



Question 33 of 36

The equations of three lines are given below.

Line 1: $y = \frac{3}{4}x + 8$

Line 2: $4y = 3x + 5$

Line 3: $8x - 6y = 8$

For each pair of lines, determine whether they are parallel, perpendicular, or neither.

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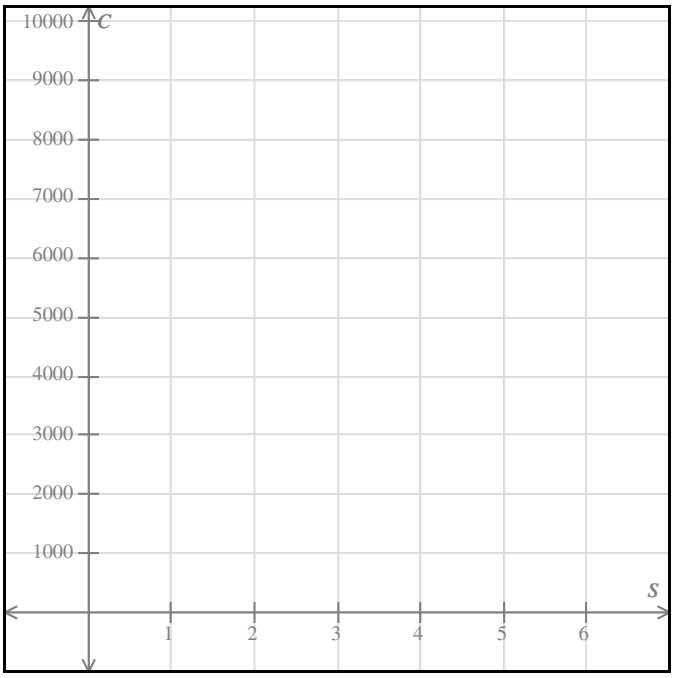
Question 34 of 36

The Sugar Sweet Company is going to transport its sugar to market. It will cost $\$7500$ to rent trucks, and it will cost an additional $\$250$ for each ton of sugar transported.

Let C represent the total cost (in dollars), and let S represent the amount of sugar (in tons) transported. Write an equation relating C to S, and then graph your equation using the axes below.



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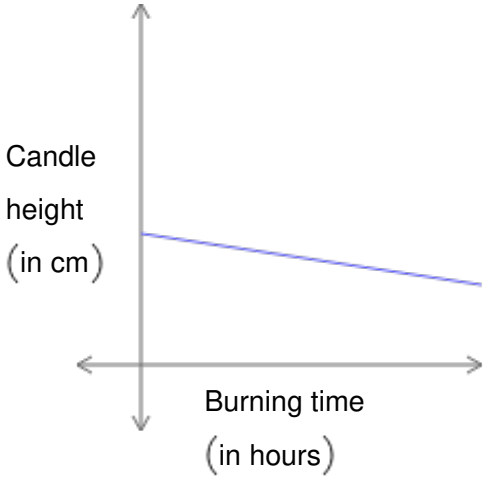
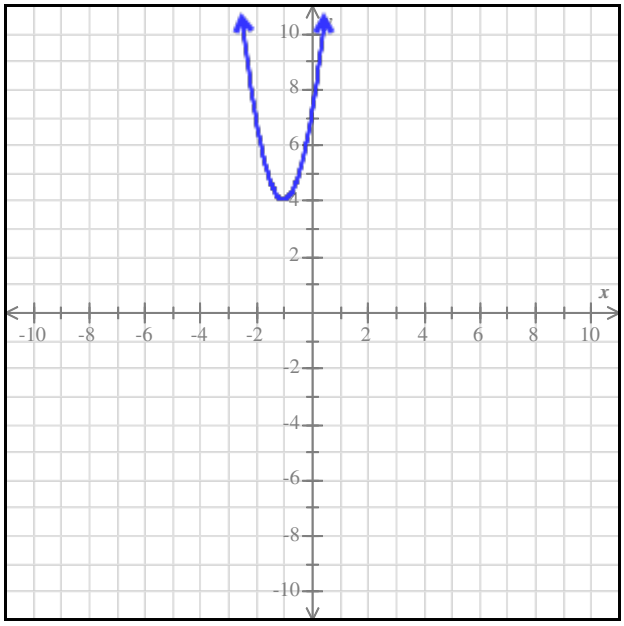
Question 35 of 36

Suppose that the height (in centimeters) of a candle is a linear function of the amount of time (in hours) it has been burning. After 13 hours of burning, a candle has a height of 13.2 centimeters. After 24 hours of burning, its height is 6.6 centimeters. What is the height of the candle after 19 hours?



Question 36 of 36

The graph of a quadratic function with vertex $(-1, 4)$ is shown in the figure below.
Find the domain and the range.



Write the domain and range using interval notation.

domain = _____

range = _____

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Practice Exam 2 Version 4 #1 Answers for class Lacoste College Algebra Fall 2019

Question 1 of 36

$$(\sqrt{x}+\sqrt{5})^2 = x+2\sqrt{5x}+5$$
$$(\sqrt{x}+2\sqrt{5})(\sqrt{x}-2\sqrt{5}) = x-20$$

Question 2 of 36

$$x = -0.26,\ -1.54$$

Question 3 of 36

$$v = 2, -5$$

Question 4 of 36

$$y = 4,\ -20$$

Question 5 of 36

$$v = 2$$

Question 6 of 36

$$x = 4,\ 2$$

Question 7 of 36

$$-18 > v$$

Question 8 of 36

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$$w < -\frac{33}{19}$$

Question 9 of 36

$$(-\infty, 5]$$

Question 10 of 36

$$|x| \geq 6$$

Question 11 of 36

$$v < -7 \quad \text{or} \quad v > 3$$

Question 12 of 36

$$M = (-1, 2)$$

Question 13 of 36

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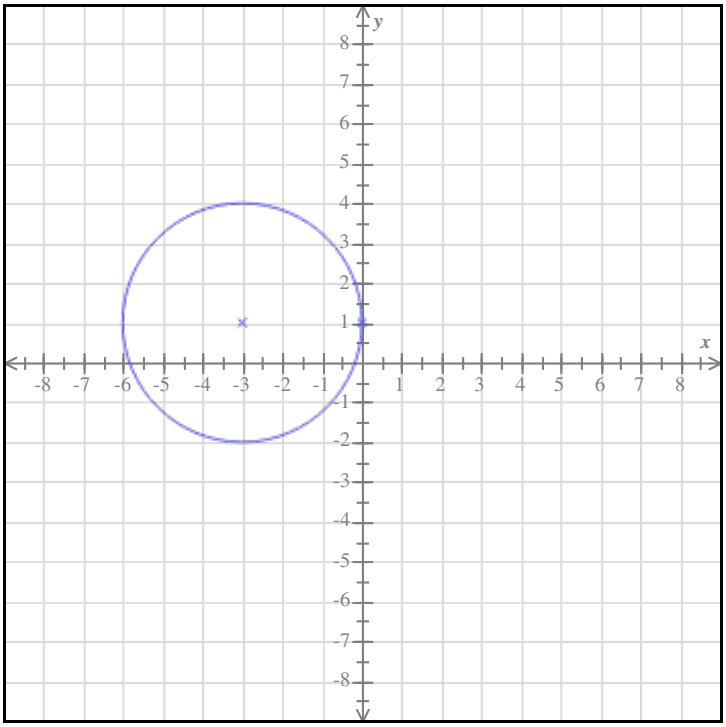
Radius: 3

Center: $(-3, 1)$



Question 14 of 36

$x^2 + y^2 = 9$

Question 15 of 36

$(x-6)^2 + (y+2)^2 = 50$

Question 16 of 36

y-intercept(s): 1

x-intercept(s): -3 , -1

Question 17 of 36

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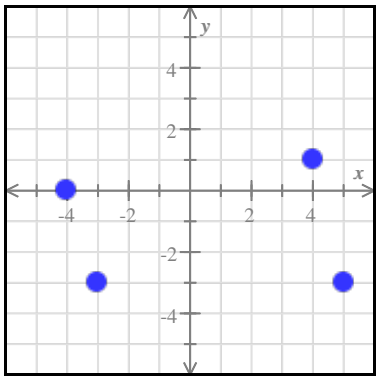
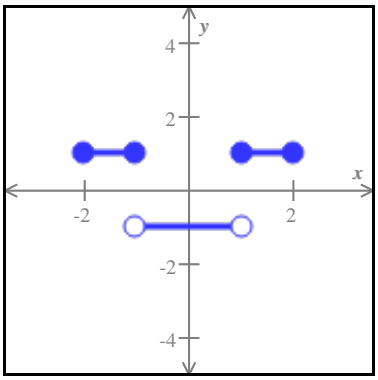
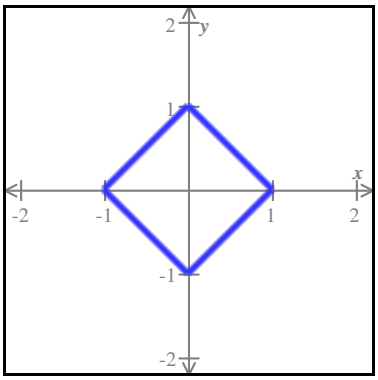
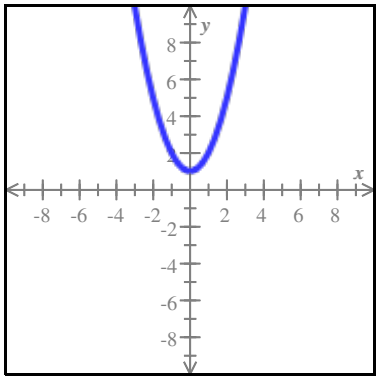
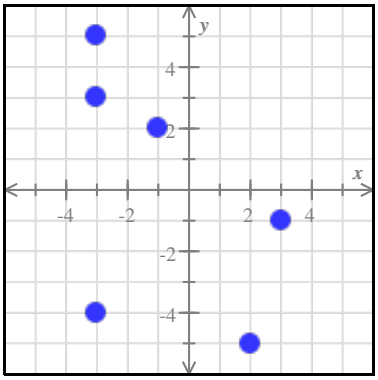
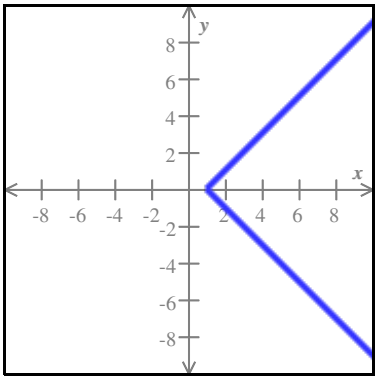
Function?	Graph 1	Graph 2	Graph 3
			
	◉ Yes ○ No	◉ Yes ○ No	○ Yes ◉ No
Function?	Graph 4	Graph 5	Graph 6
			
	◉ Yes ○ No	○ Yes ◉ No	○ Yes ◉ No

Question 18 of 36

$$f(3) = -\frac{11}{20}$$

Question 19 of 36

$$f(3a) = 9a^2 + 6$$

Question 20 of 36

domain $= \{4, -6\}$
range $= \{5, -4, -6\}$

Question 21 of 36

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Domain of f: $(-\infty, -3) \cup (-3, 2) \cup (2, \infty)$

Domain of g: $(-\infty, \infty)$

Question 22 of 36

$$\left[-10, \frac{7}{2}\right) \cup \left(\frac{7}{2}, \infty\right)$$

Question 23 of 36

$7\lvert x\rvert + y = 9$	◉ Function	○ Not a function
$x = \frac{9}{y}$	◉ Function	○ Not a function
$x^2 + \lvert y\rvert = 16$	○ Function	◉ Not a function
$5x = y^2$	○ Function	◉ Not a function

Question 24 of 36

(a) How much money does Chris have left in the account after 11 trips on the toll roads?

$80

(b) How many trips on the toll roads can he take until his account is empty?

16 trips

Question 25 of 36

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$f(-2)=2$

One value of x for which $f(x)=4$: 0

Question 26 of 36

(a) domain $=(-4,\ 2]$

(b) range $=(-3,\ 4]$

Question 27 of 36

domain: $(-\infty, \infty)$

range: $[1, \infty)$

Question 28 of 36

$$y=-\frac{1}{3}x+\frac{4}{3}$$

Question 29 of 36

-32

Question 30 of 36

(a) Find the average rate of change for the height from 0 seconds to 6.6 seconds. 30 meters per second
(b) Find the average rate of change for the height from 8.8 seconds to 13.2 seconds. – 10 meters per second

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Question 31 of 36

$$y+4=-\frac{3}{2}(x-4)$$

Question 32 of 36

$$y=\frac{1}{2}x-\frac{3}{2}$$

Question 33 of 36

Line 1 and Line 2:	(•) Parallel	( ) Perpendicular	( ) Neither
Line 1 and Line 3:	( ) Parallel	( ) Perpendicular	(•) Neither
Line 2 and Line 3:	( ) Parallel	( ) Perpendicular	(•) Neither

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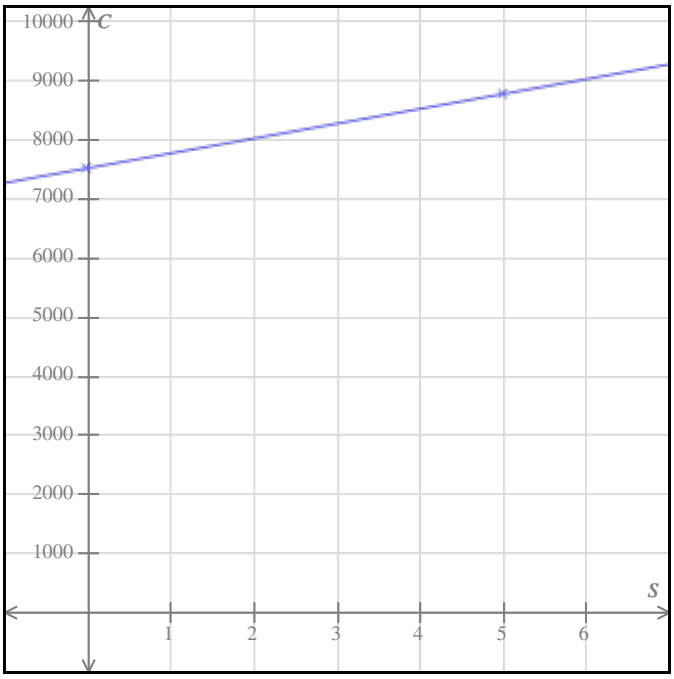
Question 34 of 36

$C = 7500 + 250S$



Question 35 of 36

9.6 centimeters

Question 36 of 36

domain: $(-\infty, \infty)$

range: $[4, \infty)$

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