

****Today we are working on #26-50 on our Secondary Math II - Review (it is SAGE/final review).**

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24. Write a quadratic function f whose zeros are -5 and -7 . $(x+5)(x+7)$

25. Fill in the blank to make the expression a perfect square.
 $x^2 - 12x + \square$

26. Solve for u .
 $u^2 - 10u + 21 = 0$

27. Solve for w .
 $5w^2 = -17w - 6$

28. Write the quadratic function in the form $f(x) = a(x-h)^2 + k$.

Handwritten notes in blue ink:
 $ax^2 + bx + c = y$
 $a(x-h)^2 + k = y$
 $(x-e)(x-f) = y$

Handwritten notes in red ink:
 $x^2 + 7x + 5x + 35$
 $x^2 + 12x + 35$
 $x - 5 = 0$
 $x = 5$
 $x + 5 = 0$
 $x = -5$

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24. Write a quadratic function f whose zeros are -5 and -7 .

25. Fill in the blank to make the expression a perfect square.

$x^2 - 12x + 36$

26. Solve for u .

$u^2 - 10u + 21 = 0$

27. Solve for w .

$5w^2 = -17w - 6$

28. Write the quadratic function in the form $f(x) = a(x-h)^2 + k$.

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26. Solve for u .

$$u^2 - 10u + 21 = 0$$

27. Solve for w .

$$5w^2 = -17w - 6$$

$(u-7)(u-3) = 0$
 $u = 7, 3$

28. Write the quadratic function in the form $f(x) = a(x-h)^2 + k$.

Then, give the vertex of its graph.

$$f(x) = 3x^2 - 18x + 31$$

29. Use the graph of the parabola to fill in the table below

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$u^2 - 10u + 21 = 0$

27. Solve for w .

$5w^2 = -17w - 6$

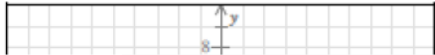
$5w^2 + 17w + 6 = 0$

28. Write the quadratic function in the form $f(x) = a(x - h)^2 + k$.

Then, give the vertex of its graph.

$f(x) = 3x^2 - 18x + 31$

29. Use the graph of the parabola to fill in the table below.

	(a) Does the parabola open upward or downward?
-------------------------------------------------------------------------------------	------------------------------------------------

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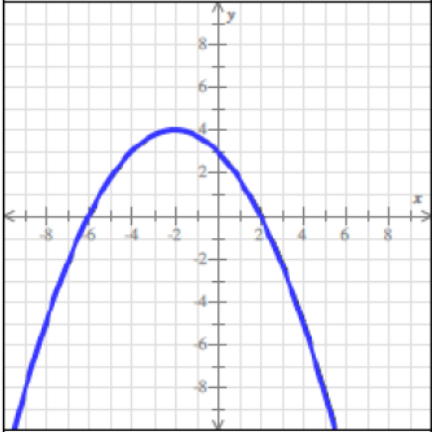
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28. Write the quadratic function in the form $f(x) = a(x-h)^2 + k$.
 Then, give the vertex of its graph.

$f(x) = 3x^2 - 18x + 31$

29. Use the graph of the parabola to fill in the table below.



Handwritten work for problem 28:

$$-31 = 3x^2 - 18x$$

$$-31 + 9 = 3(x^2 - 6x + 9)$$

$$-4 = 3(x-3)^2$$

$$y = 3(x-3)^2 + 4$$

Handwritten notes: (h, k) , $-3 \cdot -3 = 9$, vertex: $(3, 4)$

(a)	Does the parabola open upward or downward? { upward , downward }
(b)	Find the x-intercept(s). x-intercept(s): <input type="text"/>
(c)	Find the coordinates of the vertex. vertex: (<input type="text"/> , <input type="text"/>)
(d)	Find the equation of the axis of symmetry. equation of axis of symmetry: <input type="text"/>

30. The cost C (in dollars) of manufacturing x wheels at Ravi's Bicycle Supply is given by the function $C(x) = 0.5x^2 - 170x + 25,850$. What is the minimum cost of manufacturing wheels?

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42. Solve the following system of equations.

$$\begin{cases} y = x^2 + 7x - 5 \\ y = 6x + 7 \end{cases}$$

$(-4, -17)$
 $(3, 25)$

$6x + 7 = x^2 + 7x - 5$

43. Write the following as an exponential expression.

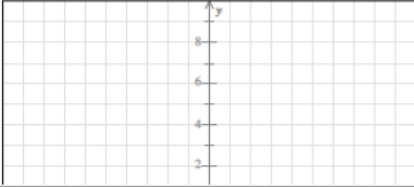
$$\sqrt[5]{t^4}$$

44. Multiply.

$$(-3 + 6i)(-4 + 3i)$$

Write your answer as a complex number in standard form.

45. Graph the equation.

$$y = -5|x|$$


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47. Consider the circle centered at the origin with radius 9.

(a) Give the equation of the circle.

(b) For each point in the table below, decide whether or not it is on the circle.

(x, y)	Is the point on the circle?	
	Yes	No
(0, -5)	<input type="radio"/>	<input checked="" type="radio"/>
($\sqrt{17}$, 8)	<input checked="" type="radio"/>	<input type="radio"/>
(3, 0)	<input type="radio"/>	<input checked="" type="radio"/>
(-8, $\sqrt{17}$)	<input checked="" type="radio"/>	<input type="radio"/>

Handwritten notes:

- $(x-h)^2 + (y-k)^2 = r^2$
- $(x-0)^2 + (y-0)^2 = 9^2$
- $x^2 + y^2 = 9^2$ or $x^2 + y^2 = 81$
- $0^2 + (-5)^2 = 25$
- $\sqrt{17}^2 + 8^2 = 17 + 64 = 81$