

Bell Ringer

Tuesday 11/12

Solve each equation

1. $25x^2 - 5x = 0$

$$5x(5x - 1) = 0$$

$$\frac{5x}{5} = \frac{0}{5}$$

$$x = 0$$

$$5x - 1 = 0$$

$$\frac{5x}{5} = \frac{1}{5}$$

$$x = \frac{1}{5}$$

2. $x^2 - 16 = 0$

$$(x + 4)(x - 4) = 0$$

$$x + 4 = 0 \quad x - 4 = 0$$

$$x = -4 \quad x = 4$$

3. $12x^2 - 4x = 0$

$$4x(3x - 1) = 0$$

$$4x = 0$$

$$x = 0$$

$$3x - 1 = 0$$

$$\frac{3x}{3} = \frac{1}{3}$$

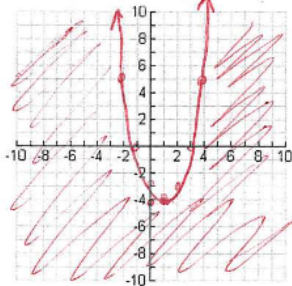
$$x = \frac{1}{3}$$

Correct Graphing Quad Inequalities ws

Name: Key **49** ~~Graphing~~ **Quadratic** Inequalities ws

Find the x-intercept(s) and vertex, then graph.

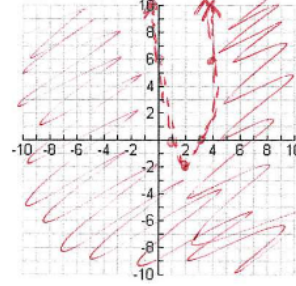
1. $y \leq (x+1)(x-3)$



$\frac{3-1}{2} = 1$
 $(2)(-2)$

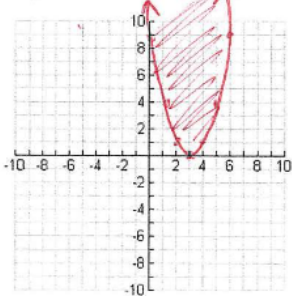
x-intercept(s): $(-1, 0), (3, 0)$
Vertex: $(1, -4)$

2. $y < 2(x-2)^2 - 2$



x-intercept(s): $(1, 0), (3, 0)$
Vertex: $(2, -2)$

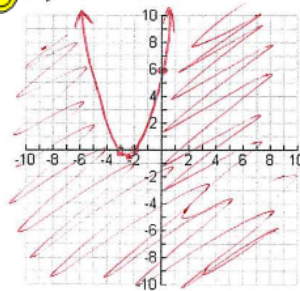
3. $y \geq x^2 - 6x + 9$



$(x-3)(x-3)$

x-intercept(s): $(3, 0)$
Vertex: $(3, 0)$

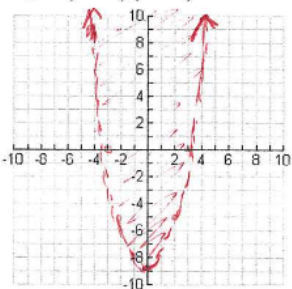
4. $y \leq x^2 + 5x + 6$



$(x+2)(x+3)$
 $\frac{-5}{2(1)} = \frac{-5}{2} = -2.5$

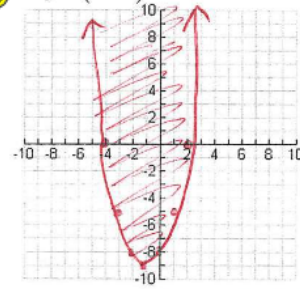
x-intercept(s): $(-2, 0), (-3, 0)$
Vertex: $(-2.5, -2.25)$ or $(-\frac{5}{2}, -\frac{9}{4})$

5. $y > (x-3)(x+3)$



x-intercept(s): $(3, 0), (-3, 0)$
Vertex: $(0, -9)$

6. $y \geq (x+1)^2 - 9$



x-intercept(s): $(-4, 0), (2, 0)$
Vertex: $(-1, -9)$

Turn in Week #12 Packet

All Ch 3 hw due Wed 11/13

All Ch 3 Standard Retakes due Fri 11/15

due Thursday - questions?

Math 2A Final Review Part 1

Name _____

Hour _____

_____ 1. Write $(4x)^{\frac{2}{3}}$ in radical form.

- a. $4\sqrt[3]{x^2}$ b. $(\sqrt{4x})^3$ c. $(\sqrt[3]{4x})^2$ d. $\sqrt{4x}$

_____ 2. Write $(\sqrt{3x})^3$ in exponential form.

- a. $(3x)^{\frac{3}{2}}$ b. $(3x)^{\frac{2}{3}}$ c. $\frac{1}{(3x)^{\frac{3}{2}}}$ d. $3x^{\frac{3}{2}}$

_____ 3. Simplify $3m^{\frac{3}{2}} \cdot 3m^{\frac{2}{3}}$

- a. $3m$ b. $6m^{\frac{3}{2}}$ c. $9m^{\frac{13}{6}}$ d. $3m^{\frac{13}{6}}$

_____ 4. Simplify $3x^0 x^{\frac{1}{3}}$

- a. 3 b. $3x$ c. 1 d. $3x^{\frac{1}{3}}$

_____ 5. Simplify $(64m^6)^{\frac{3}{2}}$

- a. $64m^9$ b. $512m^9$ c. $8m^2$ d. $512m^{\frac{15}{2}}$

_____ 6. Simplify $\frac{4xy^{-2}}{2xy^{\frac{5}{3}}}$

- a. $2x^2y^{\frac{1}{3}}$ b. $\frac{2}{y^{\frac{1}{3}}}$ c. $\frac{11}{y^{\frac{1}{3}}}$ d. $\frac{2x^2}{y^{\frac{1}{3}}}$

_____ 7. Simplify $\frac{4k^{\frac{2}{3}}}{k^{\frac{1}{2}}}$

- a. $\frac{4}{k^{\frac{1}{6}}}$ b. $4k^{\frac{7}{6}}$ c. $\frac{4}{k^{\frac{7}{6}}}$ d. $\frac{1}{4k^{\frac{1}{6}}}$

$$\frac{4xy^{-2}}{2xy^{\frac{5}{3}}} = \frac{2y^{-2-\frac{5}{3}}}{2y^{-\frac{1}{3}}} = \frac{2}{y^{\frac{1}{3}}} = \frac{2}{\frac{11}{y^{\frac{1}{3}}}}$$

$$-\frac{6}{3} - \frac{5}{3} = -\frac{11}{3}$$

Math 2A Final Review Part 1

Name _____

Hour _____

8. Simplify $\left(\frac{x^{\frac{7}{4}}y^{\frac{3}{2}}}{y^2}\right)^{\frac{1}{3}}$

Handwritten work for Q8: $\frac{7}{4} \cdot \frac{1}{3} = \frac{7}{12}$, $\frac{3}{2} \cdot \frac{1}{3} = \frac{1}{2}$, $2 \cdot \frac{1}{3} = \frac{2}{3}$. A box around option a shows $\frac{x^{\frac{7}{12}}}{y^{\frac{1}{6}}}$.

Handwritten work for Q8: $\frac{x^{\frac{7}{12}} y^{\frac{1}{2}}}{y^{\frac{2}{3}}}$

Handwritten work for Q8: $= x^{\frac{7}{12}} y^{\frac{1}{2} - \frac{2}{3}}$

Handwritten work for Q8: $(\frac{3}{3})\frac{1}{2} - \frac{2}{3}(\frac{2}{3})$
 $\frac{3}{6} - \frac{4}{6} = -\frac{1}{6}$

9. Simplify $(xy^{\frac{5}{3}})^{\frac{2}{3}}$

a. $y^4 x^{\frac{10}{9}}$

b. $x^3 y^{\frac{2}{3}}$

c. $x^{\frac{2}{3}} y^{\frac{10}{9}}$

d. y^4

10. Simplify $(3v + 6)(6v^2 - 7v - 8)$

a. $18v^3 + 15v^2 - 66v - 48$
 c. $18v^3 - 21v^2 - 30v - 48$

b. $20v^3 + 56v^2 + 44v + 24$
 d. $6v^2 - 4v - 2$

11. Simplify $(4x - 6)(4x + 6)$

a. $16x^2 + 48x + 36$

b. $16x^2 - 48x + 36$

c. $x^2 - 16x + 64$

d. $16x^2 - 36$

12. Simplify $(5n + 1)^2$

a. $25n^2 - 1$

b. $25n^2 + 1$

c. $10n + 2$

d. $25n^2 + 10n + 1$

13. Simplify $(2x - 3)(3x + 1)$

a. $6x^2 - 7x - 3$

b. $6x^2 + 11x + 3$

c. $6x^2 + 5x - 25$

d. $3x^2 - 8x + 5$

Math 2A Final Review Part 1

Name _____

Hour _____

____ 14. Factor $k^2 - 7k - 30$ completely.

- a.
- $(k + 10)(k + 3)$
- b.
- $(k - 10)(k + 3)$
- c.
- $(k + 10)(k - 3)$
- d.
- $(k + 30)(k - 1)$

____ 15. Factor $4a^2 + 16a - 240$ completely.

- a.
- $4(a + 20)(a - 3)$
- b.
- $4(a - 6)(a + 10)$
- c.
- $4(a - 6)(a - 10)$
- d.
- $4(a + 6)(a - 10)$

____ 16. Factor $6n^3 + 21n^2 - 10n - 35$ completely.

- a.
- $(3n^2 - 5)(3n^2 - 7)$
- b.
- $(3n^2 - 5)(2n + 7)$
- c.
- $(3n^2 + 5)(2n - 7)$
- d.
- $(2n - 5)(3n^2 + 7)$

____ 17. Factor $m^2 - 25$ completely.

- a.
- Not factorable*
- b.
- $(m - 5)(m - 5)$
- c.
- $(m + 5)(m - 5)$
- d.
- $(m + 25)^2$

____ 18. Factor $5n^2 - 21n + 4$ completely.

- a.
- $(5n + 4)(n + 1)$
- b.
- $5(n - 4)(n + 4)$
- c.
- $(5n - 1)(n - 4)$
- d.
- $(5n + 2)(n + 2)$

____ 19. Factor $2a^3 - 23a^2 + 56a$ completely.

- a.
- $2a(a + 28)(a + 1)$
- b.
- $a(2a - 7)(a - 8)$
- c.
- $2a(a - 7)(a + 8)$
- d.
- Not factorable*

____ 20. Find the x intercepts of $x^2 - 2x - 15 = 0$.

- a.
- $(-3, 0), (5, 0)$
- b.
- $(3, 0), (-5, 0)$
- c.
- $(7, 0), (5, 0)$
- d.
- $(-2, 0)$

Math 2A Final Review Part 1

Name _____

21. Solve $4n^2 + 20n = 0$

$4(5)^2 + 20(5) = 0$
 $200 + 100 = 0$
 $300 = 0$
 $n = 5, 7 = 0$

$4n(n+5) = 0$

Hour _____
 $\frac{4n}{4} = 0$ $\frac{n+5}{-5} = 0$
 $n = 0$ $n = -5$
 c. $n = 7, n = 0$ d. $n = 5$

22. Find the vertex of $f(x) = x^2 - 4x + 3$

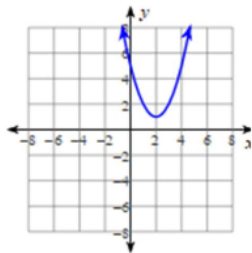
- a. (2, -1) b. (-2, -15) c. (-2, 7) d. (0, 1)

23. Find the vertex of $f(x) = -x^2 + 2x - 4$

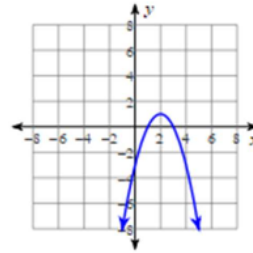
- a. (1, -3) b. (1, -1) c. (-1, -7) d. (0, -4)

24. Identify the vertex, axis of symmetry, and min/max value of $y = (x+1)^2 + 2$. Then match it to the correct graph.

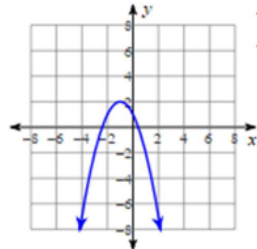
- a. Vertex: (2, 1)
 Axis of Symm: $x = 2$
 Min value = 1



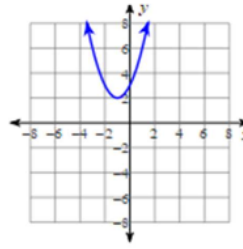
- b. Vertex: (2, 1)
 Axis of Symm: $x = 2$
 Max value = 1



- c. Vertex: (-1, 2)
 Axis of Symm: $x = -1$
 Max value = 2



- d. Vertex: (-1, 2)
 Axis of Symm: $x = -1$
 Min value = 2



25. Given the following criteria, identify the correct equation. An absolute value function that has been shifted right 3, and has been shifted up 2, reflected over the x-axis, and has a vertical stretch of 4.

- a. $f(x) = -|x + 3| + 2$ b. $f(x) = -4|x + 3| + 2$
 c. $f(x) = 4|x - 3| + 2$ d. $f(x) = -4|x - 3| + 2$

30 minutes work time - answer questions rest of time

Math 2A Final Review Part 2

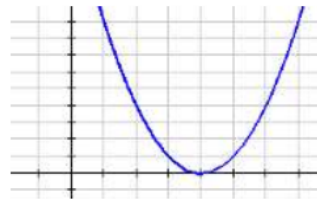
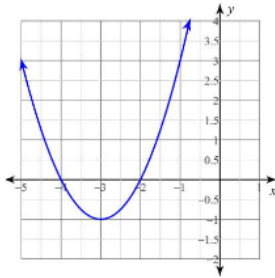
Name _____

Hour _____

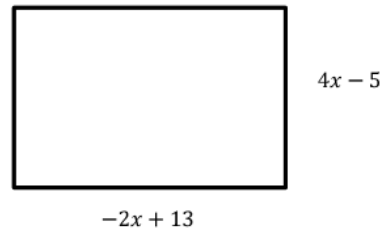
due Friday

Read all instructions completely. Show all of your work. No points will be given without appropriate work being shown and answers indicated.

1. Write a quadratic equation in vertex form for each graph below.



2. Given the following rectangle, calculate the **area** of the rectangle:



3-4. Write a quadratic function that fits the given criteria.

3. Vertex at $(2, -3)$ through $(0, -7)$, written in vertex form:

4. Solutions at $x = -4$ and $x = \frac{2}{3}$, written in standard form:

5. Write the equation for a quadratic function that has a vertical stretch of 4, shifted right 2 units, and shifted up 9.

6. Write the equation for a quadratic function that is reflected over the x-axis, shifted down 1 unit, and compressed by a factor of $\frac{2}{3}$.

Math 2A Final Review Part 2

Name _____

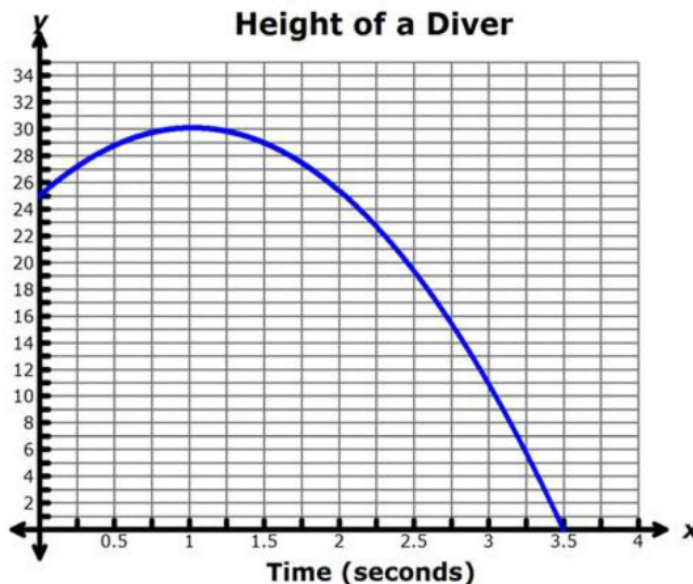
Hour _____

The graph represents the height of a diver over the course of one dive.

7. What is the height of the diver 3 seconds after she jumps?

8. How long does it take for the diver to hit the water?

9. How long does it take for the diver to reach maximum height?



10. What is the maximum height of the diver?

11. What is the real world domain of the function?

12. What is the real world range of the function?


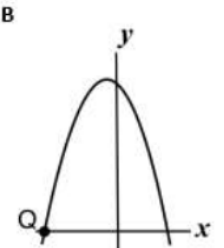
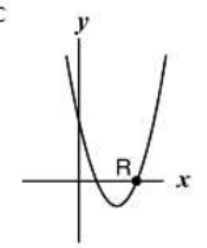
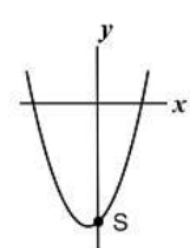
13. What is the average rate of change of the diver on the interval $[0.5, 2.5]$?

Math 2A Final Review Part 2

Name _____

Hour _____

Below are four equations of quadratic functions and four sketches of quadratic graphs.

<p>A. $y = x^2 - 6x + 8$</p>	<p>B. $y = (x - 6)(x + 8)$</p>	<p>C. $y = (x - 6)^2 + 8$</p>	<p>D. $y = -(x + 8)(x - 6)$</p>
<p>A.</p> 	<p>B.</p> 	<p>C.</p> 	<p>D.</p> 

Match the equation to its graph and explain your decision using key features such as vertex, x-intercepts or y-intercept.

14. Equation A **matches** Graph _____, because _____

15. Equation B **matches** Graph _____, because _____

16. Equation C **matches** Graph _____, because _____

17. Equation D **matches** Graph _____, because _____

18. Write the coordinates of the points:

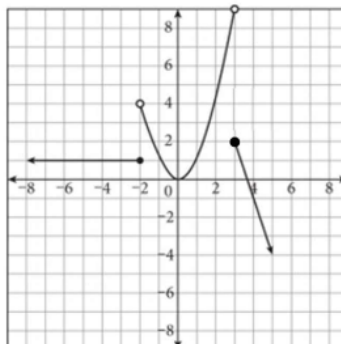
P(,) Q(,) R(,) S(,)

Math 2A Final Review Part 2

Name _____
Hour _____

19. Write the piecewise function for the given graph:

$$f(x) = \left\{ \right.$$



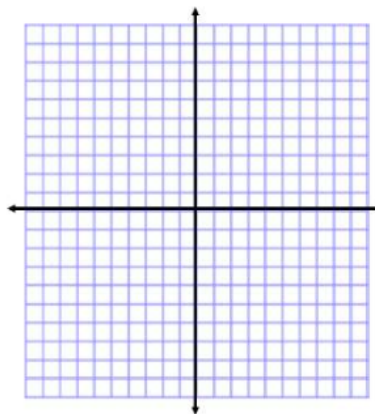
20. Graph the given piecewise function:

$$f(x) = \begin{cases} -2, & x < -4 \\ (x + 2)^2 + 1, & -4 \leq x < 0 \\ 2|x - 3| - 4, & x \geq 0 \end{cases}$$

Find $f(-6) =$ _____

Find $f(-4) =$ _____

Find $f(0) =$ _____



21. Graph the following function: $f(x) = -\frac{1}{4}|x + 1| - 5$

