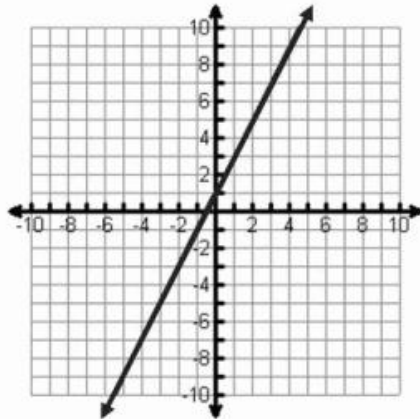Name: _____ Date: _____ Class Period: _____

CBA District Algebra 1 Review

Review Question 1

The function $f(x) = 2x + 1$ is graphed below.

If the domain of $f(x) = 2x + 1$ is restricted so that $\{-2 \le x \le 3\}$, which integer is *not* in the range?

A -4

B -2

C 0

D 7

Review Question 2

If the domain of $f(x) = 2x + 3$ is $\{-3 < x \le 0\}$, which number is *not* in the range?

A −1

B 0

C 3

D 6

Review Question 3

In 2005, the Shabelle River in Somalia rose an estimated 5.25 inches every hour for 15 hours. The increase in water level, $f(x)$, is represented by the function $f(x) = 5.25x$, where x is the number of hours. What is the domain of the function for this situation?

F $[0, 15]$

G $[0, 78.75]$

H $(5.25, 15]$

J $[5.25, 78.75)$

Review Question 4

Cole kicked a football. The equation $h = -16t^2 + 60t$ describes the height of the ball t minutes after it was kicked. Approximately how many seconds went by before the ball hit the ground?

A 2.6 seconds

B 3.2 seconds
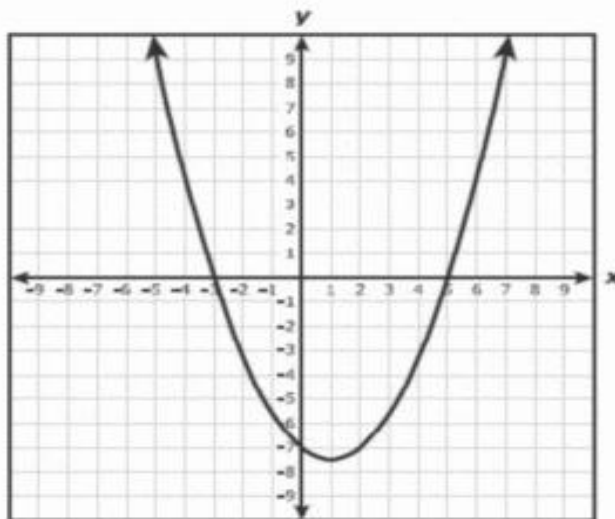
C 3.5 seconds

D 3.8 seconds

Review Question 5

Solve: $x^2 + 8x + 10 = -5$

F −5, −3

G −5, 3

H 5, 2

J 5, 3

Review Question 6

The graph of the quadratic function h is shown below.

What is the solution set for $h(x) = 0$?

F $\{-3, 5\}$

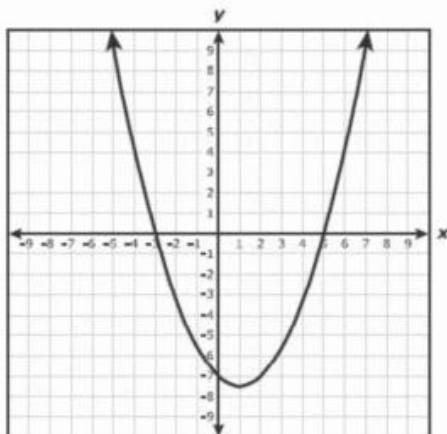**G** $\{-5, 3\}$

H $\{1, -7.5\}$

J $\{0, -7\}$

Review Question 7

At which point(s) does the equation $y = 3x^2 + 9x - 30$ intersect the x-axis?

F $(5, 0)$ and $(-2, 0)$

G $(5, 0)$ and $(2, 0)$

H $(-5, 0)$ and $(2, 0)$

J none of the above

Review Question 8

The graph of a quadratic function is shown below.

What is the best estimate of the positive value of x for which this function equals 8?

A 2

B 4

C 13

D 7

Review Question 9

The table below contains values for x and y in a quadratic function.

x	y
−3	12
−2	0
−1	−8
0	−12
1	−12
2	8
3	0

What are the roots of this quadratic function?

A   0 and −12

B   −12, −2 and 3

C   −12, 0 and 1

D   −2 and 3

Review Question 10

At which point(s) does the equation $y = 3x^2 + 9x - 30$ intersect the x-axis?

F $(5, 0)$ and $(-2, 0)$

G $(5, 0)$ and $(2, 0)$

H $(-5, 0)$ and $(2, 0)$

J none of the above

Review Question 11

Which is an equation whose roots are 4 and -1?

F $x^2 - 3x - 4 = 0$

G $x^2 + 3x + 4 = 0$

H $x^2 - 3x + 4 = 0$

J $x^2 + 3x - 4 = 0$

Review Question 12

What are the x-intercepts of the graph of the quadratic function $f(x) = x^2 + 5x - 24$?

A -8 and -3

B -8 and 3

C -3 and 8

D 8 and 3

Which of the following data sets is exponential?

F $\{(-3, -5), (-1, 4), (0, 3)(1, 2)\}$
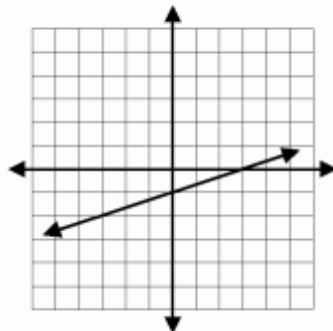
G $\{(-3, -1), (-2, 0), (-1, 1), (0, 2)\}$

H $\{(0, 0.1), (2, 0.9), (3, 2.7), (4, 8.1)\}$

J $\{(1, 2), (3, 5)(7, 9.5), (10, 21.7)\}$

The graph of a line is shown below.

Which of the following is the equation of a second line that has twice the slope and is shifted down five units?

A $y = \frac{2}{3}x - 6$

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

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

D $y = \frac{2}{3}x + 4$

Review Question 15

Which statement describes the effect on the vertex of the parabola $y = x^2 - 3$, if the equation is changed to $y = x^2 + 5$?

A The vertex is translated upward 5 units.

B The vertex is translated upward 8 units.

C The vertex is reflected downward 2 units.

**D** The vertex does not change its position.

Review Question 16

Which will be the effect on the vertex of the parabola $y = 4x^2 + 1$, if the equation is changed to $y = -4x^2 + 1$?

F The vertex is translated upward 8 units.

G The vertex is translated downward 8 units.

H The vertex is reflected across the x-axis.

J The vertex does not change its position.

Review Question 17

Graph the following exponential function. Make a table and state the domain, range, and y-intercept.
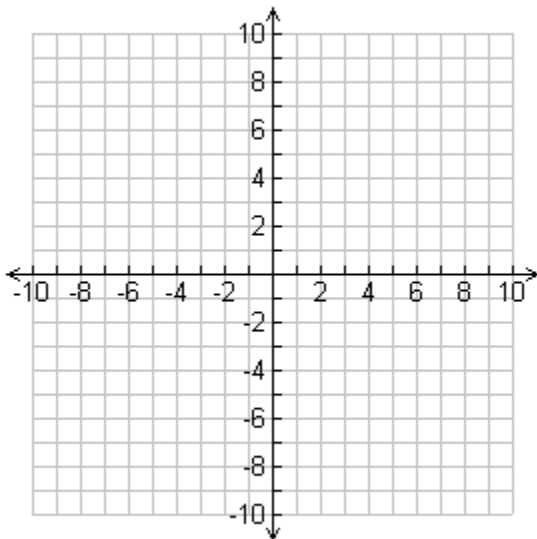
$$y = 2^x - 3$$

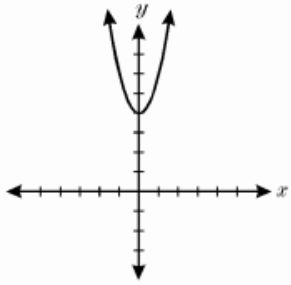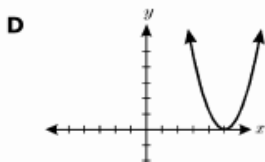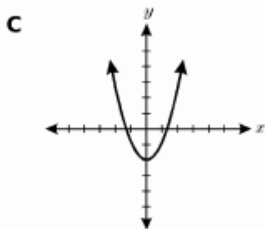Domain:

Range:

Y-Intercept
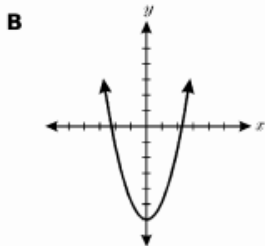
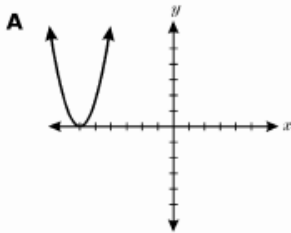| x	y
-2	
-1	
0	
1	
2	

Review Question 18

The graph of $y = x^2 + 4$ is shown below.

Which graph would best represent the graph of this parabola if it is translated 6 units down?

A

B

C

D

Review Question 19 (Short Answer)

Explain the similarities and differences between finding the domain and range of a quadratic and exponential functions. Give an example of each.
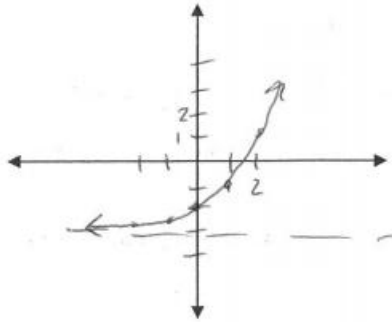
Key

1. A
2. D
3. F
4. D
5. F
6. F
7. H
8. D
9. D
10. H
11. F
12. B
13. H
14. A
15. B
16. J

$y = 2^x - 3$

x	y
-2	-2.75
-1	-2.5
0	-2
1	-1
2	1

Growth or Decay (circle one)

Domain: $\mathbb{R}$

Range: $y > -3$

y-intercept: $(0, -2)$

equation for asymptote: $y = -3$

17.
18. C
19. Domain – All real Numbers
    Quadratic – Range – Min/Max Point
    Exponential – Range - Asymptote