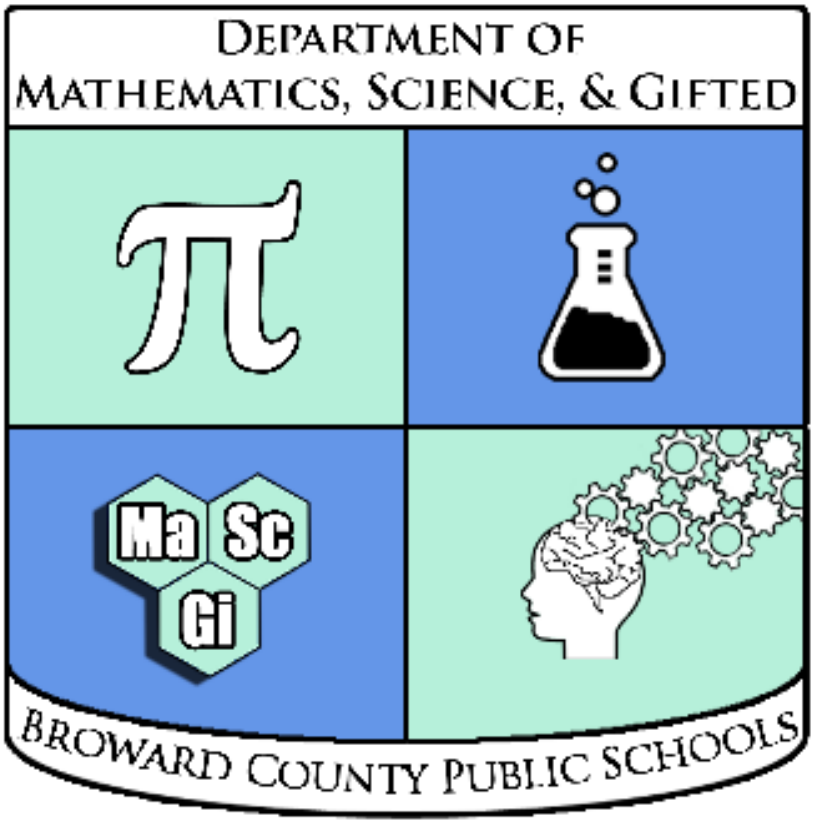
Name: _____

# EOC FSA

# Practice Test Key




# Algebra 2

## Calculator Portion

**Compiled by the Broward County Public Schools**
**Office of Instruction and Intervention**
**Mathematics, Science, & Gifted Department**

**Algebra 2 EOC FSA Practice Test (Calculator Portion)**
**Answer Section**

1 ANS:

Use the Graphing Calculator tool. Select Graphing. If not already highlighted in blue, select Expressions (Y=). Enter the equation as $Y1 = -16x^2 + 2$. Select Graph. Click on Zoom Out until the vertex is visible. The initial height of the coconut is 24 feet.

PTS: 1 STA: MAFS.912.F-LE.2.5

2 ANS:

Notice that for Colony 1 and Colony 3, the difference between consecutive numbers of cells is constant. Thus, these data increase linearly and do not represent exponential growth.

For Colony 5, the ratio between consecutive numbers of cells is constant, but the values are decreasing. This means that the data represent exponential decay.

For Colony 2 and Colony 4, the ratio between consecutive numbers of cells is constant, and the values are increasing. Thus, the only tables that represent exponential growth are the tables for Colony 2 and Colony 4.

PTS: 1 STA: MAFS.912.F-IF.3.7e

3 ANS: B PTS: 1 STA: MAFS.912.A-CED.1.3

4 ANS: C, E PTS: 1 STA: MAFS.912.A-REI.1.2

5 ANS:
-0.75 or equivalent

PTS: 1 STA: MAFS.912.A-REI.1.2

6 ANS: C PTS: 1 NAT: MAFS.912.S-ID.1.4
MSC: DOK 1

7 ANS: D PTS: 1 STA: MAFS.912.A-REI.3.6

8 ANS: B PTS: 1 STA: MAFS.912.S-CP.2.7
MSC: 2

9 ANS:

First, the function should convert x British pounds to $B(x)$ U.S. dollars. Then the function should convert $B(x)$ U.S. dollars, to Canadian dollars. Thus, the correct composite function is $C(B(x)) = C(1.59x) = 0.99(1.59x) = 1.5741x$. Therefore, to go from $x$ British pounds to $y$ Canadian dollars, the correct equation is $C(B(x)) = 1.5741x$.

PTS: 1 STA: MAFS.912.F-BF.1.1c

10 ANS: C PTS: 1 STA: MAFS.912.F-TF.1.1

11 ANS: A PTS: 1 STA: MAFS.912.S-CP.1.3
MSC: 1

12 ANS: D PTS: 1 STA: MAFS.912.A-SSE.1.1a

13 ANS:
-7.5 or equivalent

PTS: 1 STA: MAFS.912.A-REI.1.2

14 ANS: D PTS: 1 STA: MAFS.912.S-CP.1.3
MSC: 1

15 ANS: B PTS: 1 STA: MAFS.912.F-IF.3.8

16 ANS: D PTS: 1 NAT: MAFS.912.S-ID.1.4
MSC: DOK 2

17 ANS: B PTS: 1 STA: MAFS.912.A-REI.3.7

18 ANS:

The situation can be modeled as a linear equation in slope-intercept form, where C is the dependent variable and t is the independent variable. Since C increases by \$10 for every ticket the class buys, 10 should be the coefficient of t that gives the slope of the linear function. Since C is \$20 even when no tickets have been bought, at $t = 0$, 20 is the intercept. So the representative equation can be written as $C = 10t + 20$. Only one other equation in part A is equivalent: $-10t + C = 20$.

In part B, the line should start at (0, 20), the intercept. It should then continue increasing at a rate of \$10 per ticket, or with a slope of 10.

PTS: 1 STA: MAFS.912.A-CED.1.2

19 ANS: C PTS: 1 STA: MAFS.912.S-CP.2.7
MSC: 2
20 ANS: D PTS: 1 STA: MAFS.912.F-BF.1.2
21 ANS: D PTS: 1 STA: MAFS.912.F-TF.1.2
22 ANS: B PTS: 1 STA: MAFS.912.A-SSE.2.4
23 ANS: C PTS: 1 STA: MAFS.912.S-CP.1.2
MSC: 2
24 ANS: B PTS: 1 STA: MAFS.912.S-CP.1.5
25 ANS: A PTS: 1 STA: MAFS.912.F-TF.3.8
26 ANS: C PTS: 1 NAT: MAFS.912.S-ID.1.4
MSC: DOK 2
27 ANS:
Part A:h= 4,k= 5
Part B: 7

PTS: 1 STA: MAFS.912.A-REI.1.2
28 ANS: C PTS: 1 STA: MAFS.912.S-CP.1.2
MSC: 2
29 ANS: D
Write a system of equations for the price of each item. Using elimination and substitution, find one of the values and then substitute it in your equations.

| | Feedback |
|---|---|
| A | Did you interchange the prices? |
| B | You have substituted the values incorrectly. |
| C | Did you calculate the quantities correctly? |
| D | Correct! |

PTS: 1 STA: MAFS.912.A-CED.1.2
30 ANS: D PTS: 1 STA: MAFS.912.S-CP.1.4
31 ANS: B, E PTS: 1 STA: MAFS.912.A-CED.1.2
32 ANS: D PTS: 1 STA: MAFS.912.S-IC.2.5
33 ANS: C PTS: 1 STA: MAFS.912.F-IF.2.4
34 ANS: B PTS: 1 STA: MAFS.912.S-CP.1.3
MSC: 2

35 ANS:

The equation $5x^2 + 2x + 1 = 0$ can be solved using the quadratic formula as shown.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$= \frac{-(2) \pm \sqrt{(2)^2 - 4(5)(1)}}{2(5)}$$
$$= \frac{-2 \pm \sqrt{-16}}{10}$$
$$= \frac{-2 \pm \sqrt{16}\sqrt{-1}}{10}$$
$$= \frac{-2 \pm 4i}{10}$$
$$= -0.2 \pm 0.4i$$

Therefore, one solution to the equation is $-0.2 + 0.4i$, and the other solution is $-0.2 - 0.4i$.

PTS: 1 STA: MAFS.912.N-CN.3.7

36 ANS: C PTS: 1 STA: MAFS.912.F-TF.1.1

37 ANS: B PTS: 1 STA: MAFS.912.S-CP.2.7
MSC: 2

38 ANS:

The equation is solved using the steps shown.

$$(x + 13)^{\frac{1}{2}} = 10$$
$$\left[(x + 13)^{\frac{1}{2}}\right]^2 = 10^2$$
$$x + 13 = 100$$
$$x = 87$$

Then, since substituting this value into the original equation results in a true statement, the solution for $x$ is 87.

PTS: 1 STA: MAFS.912.A-REI.1.2

39 ANS: D PTS: 1 STA: MAFS.912.S-CP.1.2
MSC: 2

40 ANS: B
Write a system of equations and use substitution and elimination to find the values.

| | Feedback |
|---|---|
| A | The quantities of wheat and cocoa are interchanged. |
| B | Correct! |
| C | Did you substitute the values in the system of equations correctly? |
| D | Did you calculate the quantities correctly? |

PTS: 1 STA: MAFS.912.A-CED.1.2
41 ANS: C PTS: 1 STA: MAFS.912.F-LE.1.4
42 ANS:

Evaluate the function where $t = 2$. Calculate the value of $f(2)$ as shown.

$$f(2) = -16(2)2 + 40(2) + 6$$
$$= -64 + 80 + 6$$
$$= 22$$

PTS: 1 STA: MAFS.912.A-CED.1.1
43 ANS:

Use the Graphing Calculator tool. Select Regression. Enter the $x$-values in the $x$ column. Enter the $f(x)$ values in the Y1 column. Select Exponential. The equation displayed is $Y1 = 6 * (2)^{\wedge x}$. Thus, the correct function is $f(x) = 6(2)^x$.

PTS: 1 STA: MAFS.912.A-CED.1.1

44 ANS:

The equation can be factored using the steps shown.

$3x^2 + 14x = 5$
$3x^2 + 14x - 5 = 0$
$3x^2 + 15x - x - 5 = 0$
$3x^2 + (15 - 1)x - 5 = 0$
$(3 \cdot 1)x^2 + [(3 \cdot 5) + (1 \cdot -1)]x + (5 \cdot -1) = 0$
$(3x - 1)(x + 5) = 0$

PTS: 1 STA: MAFS.912.A-SSE.2.3a

45 ANS:

The equation $y = 4x^3 - 12x^2 - 4x + 12$ can be factored as shown.

$y = 4x^3 - 12x^2 - 4x + 12$
$y = 4(x^3 - 3x^2 - x + 3)$
$y = 4(x^2(x - 3) - (x - 3))$
$y = 4((x^2 - 1)(x - 3))$
$y = 4(x + 1)(x - 1)(x - 3)$
$0 = 4(x + 1)(x - 1)(x - 3)$

From these factors, it is apparent that the zeros of the polynomial are $x = -1$, $x = 1$, and $x = 3$.

PTS: 1 STA: MAFS.912.A-APR.2.3

46 ANS: B PTS: 1 STA: MAFS.912.F-TF.2.5