Foundations of Algebra Name:_____

Study Guide for Fall 2018 Benchmark #3

Period____

(MGSE9-12.A.CED.2, DOK 2)

1) A line has a slope of 9 and contains the point (0, 18). Write the equation of the line.

2) Write the equation of a line that has a slope of 10 and goes through point (3, 5).

(MGSE9-12.F.IF.2, DOK1)

3) Evaluate $y = -7x - 2$ when $x = 4$.

(MGSE9-12.F.IF.1, DOK1)

4) Circle the relations that are functions.

A) (2, 3), (2, 3), (2, 5)
B) (-4, 4), (5,8), (-4, 6)
C) (0, 7), (1, 7), (6, 7)
D) (2, 4), (4, 8), (6, 10)

5) What is the domain and range of the relation (8, 6), (2,4), (12,0), (15,-3)?

(MGSE9-12.F.IF.6, DOK1) Find the slope of each line.

6) $(-6, 11), (13, 15)$

A) $\frac{4}{19}$ B) $\frac{19}{4}$

C) $-\frac{4}{19}$ D) $-\frac{19}{4}$

7) $(-19, 15), (5, 15)$

A) $\frac{5}{2}$ B) 0

C) Undefined D) $-\frac{5}{2}$

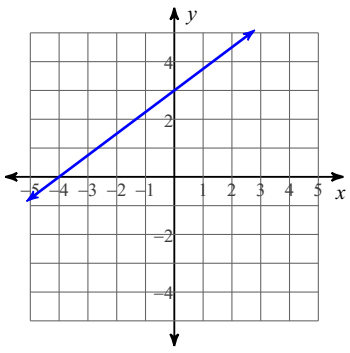
8) Write the equation of the given ordered pairs.
(0,14), (1,12), (2,10), (3,8)

(MGSE9-12.F.IF.6, DOK1) Given the equation below, identify the slope and the y-intercept.

9) $y = 2x - 1$

Write the slope-intercept form of the equation of each line.

10)



A) $y = 3x + \frac{1}{4}$ B) $y = \frac{5}{4}x + \frac{1}{4}$

C) $y = \frac{1}{4}x + 3$ D) $y = \frac{3}{4}x + 3$

(MGSE9-12.A.REI.3, DOK1) Solve each equation.

11) $x - 7 + 8x = 2$

A) No solution. B) $\{-6\}$
C) $\{6\}$ D) $\{1\}$

Find the x and y intercepts.

12) $2x - 4y = 32$

(MGSE9-12.A.REI.3, DOK1) Solve each equation.

13) $4m + 5m = 9$

A) $\{1\}$
B) { All real numbers. }
C) $\{-16\}$
D) $\{8\}$

14) $6(1 - 3r) = 150$

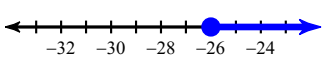
A) $\{6\}$ B) $\{4\}$
C) $\{-8\}$ D) No solution.

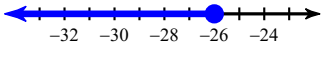
15) $6(5x + 6) = 246$

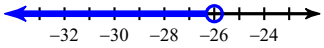
A) $\{-4\}$ B) $\{-12\}$
C) $\{5\}$ D) $\{7\}$

(MGSE9-12.A.REI.3, DOK1) Solve each inequality and graph its solution.

16) $2 - b - b \geq -4$

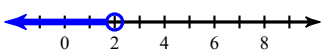
A) $b \geq -26$:


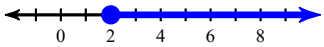
B) $b \leq -26$:


C) $b \leq -26$:


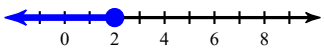
D) $b \leq 3$:


17) $-3x - 6x > -18$

A) $x < 2$:


B) $x > 2$:


C) $x > 2$:


D) $x < 2$:


18) Classify each exponential function as growth or decay. Then sketch a graph of each.

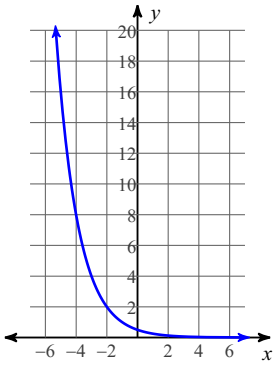
A) $y = 5 \cdot 0.44^x$ B) $y = 3 \cdot \left(\frac{5}{3}\right)^x$

C) $y = 3 \cdot \left(\frac{4}{3}\right)^x$ D) $y = 4 \cdot \left(\frac{1}{3}\right)^x$

(MGSE9-12.F.IF.7a, DOK2) Sketch the graph of each function.

19) $y = \frac{1}{2} \cdot \left(\frac{1}{2}\right)^x$

A)



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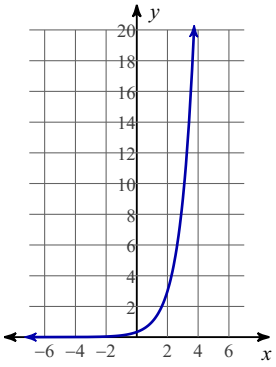

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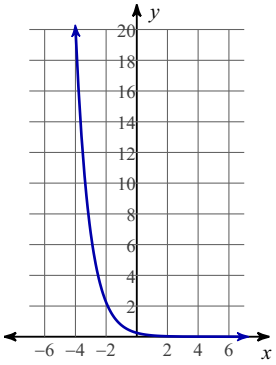

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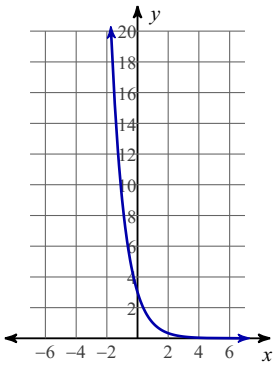
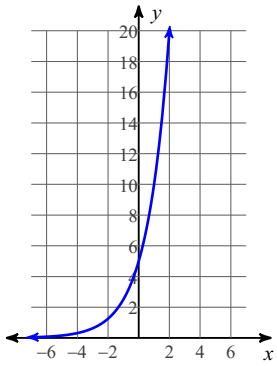


20) $y = 5 \cdot 2^x$

A)



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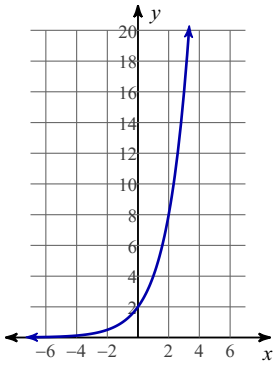

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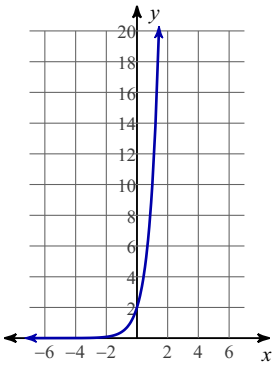

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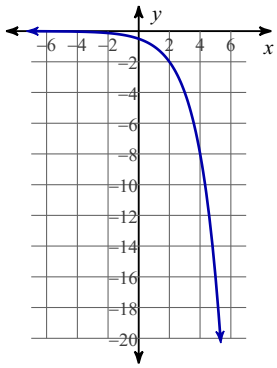
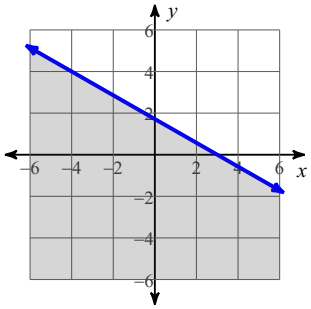


(MGSE9-12.A.REI.12, DOK1)
Sketch the graph of each linear inequality.

21) $y > -\frac{7}{4}x - 3$

A)



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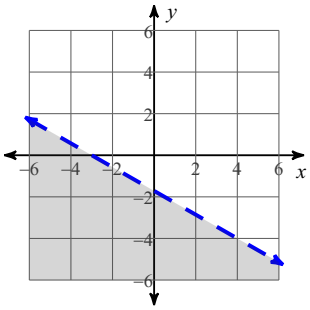
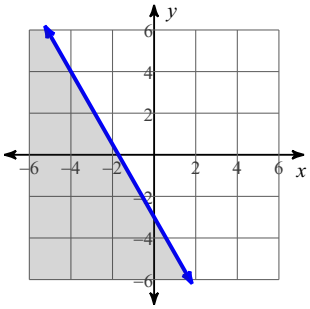
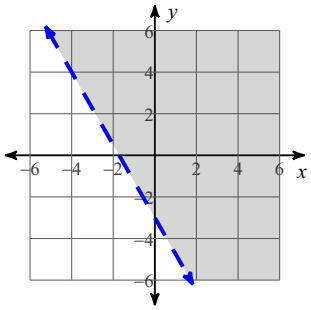


C)

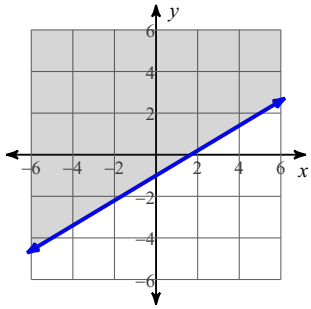


D)



22) $y \leq \frac{3}{5}x - 1$

A)



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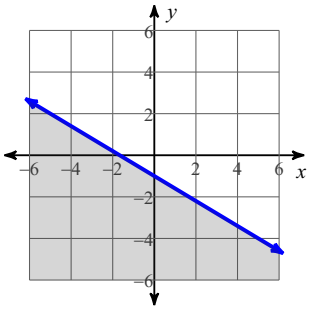
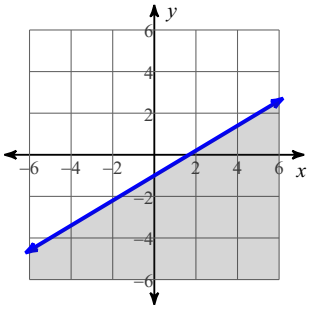


C)



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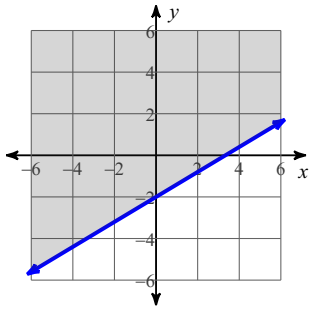
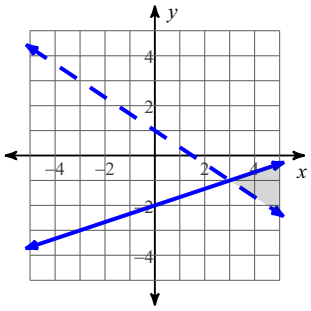


(MGSE9-12.A.REI.12, DOK1) Sketch the solution to each system of inequalities.

23) $y \leq -\frac{2}{3}x + 1$

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

A)



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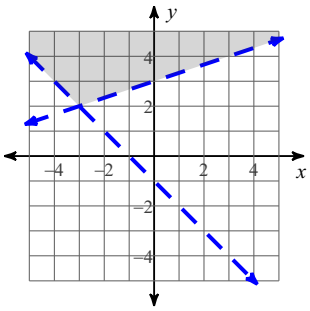
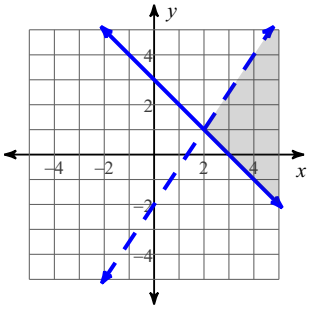


C)



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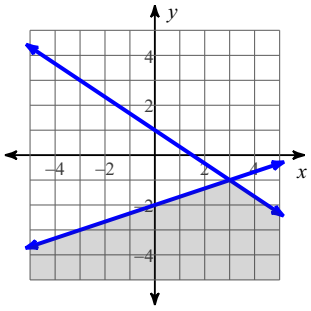
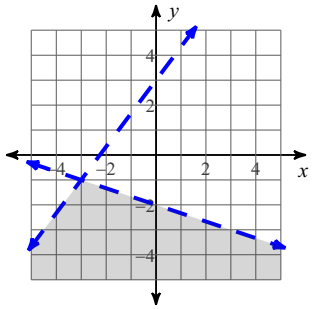


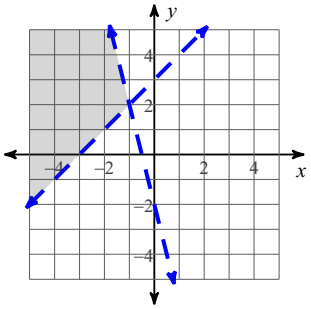
24) $y < -4x - 2$

$y \leq x + 3$

A)



B)



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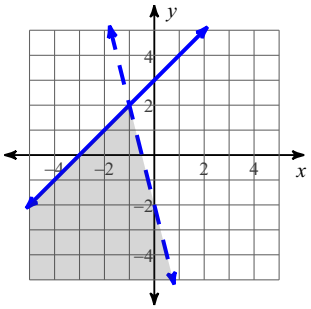
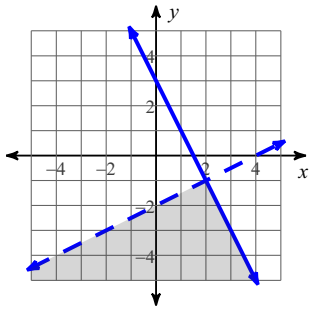
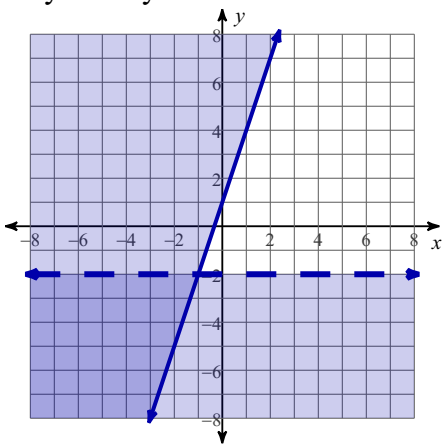


D)



(MGSE9-12.A.REI.12, DOK3)

25) Tell whether (6, 2) is a solution and explain why or why not?



A) No, it is not a solution because it lies on the dashed border of the feasible region.
B) No, because it lies on a solid border of the feasible region.
C) Yes, it is a solution because it lies in the feasible region.

Write the explicit formula for the arithmetic sequence.

26) 30, 25, 20, 15, ...

MGSE9-12.F.LE.2, DOK2) Choose the best answer.

27) Based on the geometric sequence 3, -12, 48, -192..... what would the formula be for finding the 18th term?

A) $y = 4 \cdot (-3)^{18-1}$ B) $y = 3 \cdot (-4)^{18-1}$ C) $y = 4 \cdot (-3)^{17-1}$ D) $y = -4 \cdot (-3)^{18-1}$

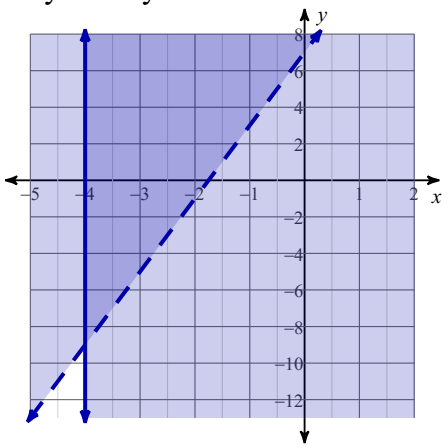
(MGSE9-12.F.BF.2, DOK1)

28) What is the 15th term of the arithmetic sequence -15, -7, 1, 9,.....

Find the common ratio of the Geometric Sequence and write the explicit formula.

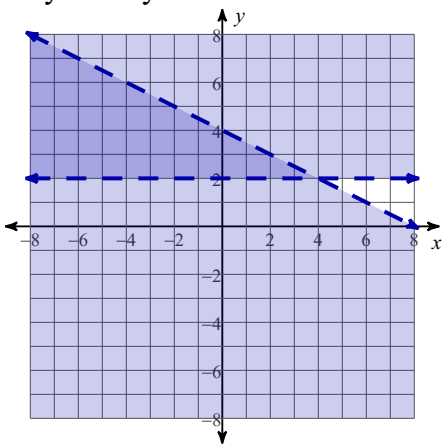
29) −5, −10, −20, −40, ...

30) Tell whether (-3, 4) is a solution and explain why or why not.



A) Yes, because it lies on a solid border of the feasible region.
B) No, because it lies on a solid border of the feasible region.
C) No, it is not a solution because it lies on the dashed border of the feasible region.
D) Yes, it is a solution because it lies in the feasible region.

31) Tell whether (4, -6) is a solution and explain why or why not.



A) Yes, because it lies on a solid border of the feasible region.
B) No, because it does not lie in the feasible region.
C) No, it is not a solution because it lies on the dashed border of the feasible region.
D) Yes, it is a solution because it lies in the feasible region.

Solve each system by substitution.

32) $y = -2x + 4$
$7x + 2y = 8$

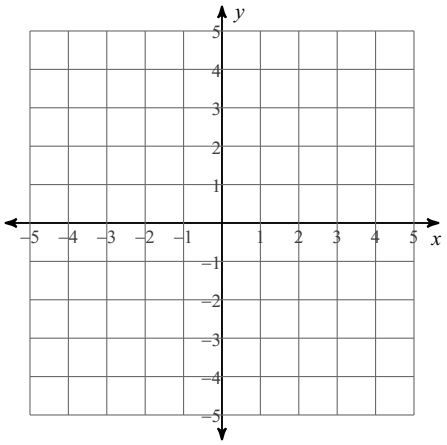
33) $y = x - 11$
$-2x - y = -4$

34) $y = 2x - 2$
$y = 7x + 13$

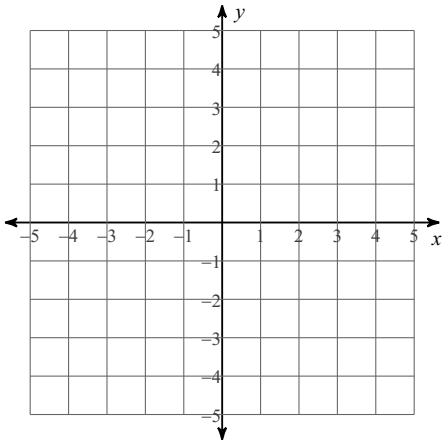
35) $y = 6x - 16$
$y = -6x + 8$

Solve each system by graphing.

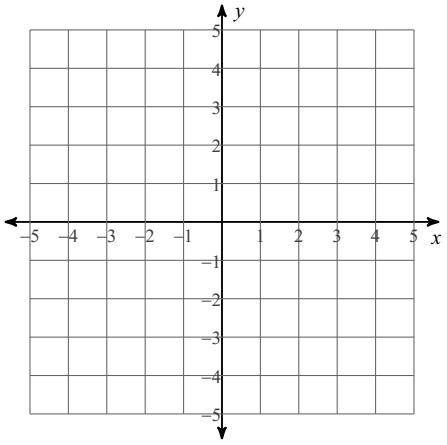
36) $y = -7x - 3$
$y = 4$



37) $y = \frac{1}{3}x + 4$
$y = -\frac{5}{3}x - 2$



38) $7x - y = 4$
$x + y = 4$



39) $7x - 4y = 12$
$x - 4y = -12$