

Fall Benchmark #1 Study Guide

(MFA.AA.1.c) Write each as an algebraic expression.

1) twice a number

$$2n$$

2) the sum of a number and 5

$$n+5$$

3) 8 more than 10

$$10+8$$

4) the sum of 9 and 10

$$9+10$$

(MFA.EI.1) Solve each equation.5) $18 + n = 34$

$$n = 16$$

6) $-14 + n = -17$

$$n = -3$$

7) $-19k = -228$

$$k = 12$$

8) $b - 2 = 7$

$$b = 9$$

9) $2(-3 + x) = -24$

$$x = -9$$

10) $-7 - 7x = -35$

$$x = 4$$

11) $10(-1 + v) = -100$

$$v = -9$$

12) $\frac{r}{9} - 5 = -3$

$$r = 18$$

13) $r + 6r = -14$

$$r = -2$$

14) $r + 5r = -24$

$$r = -4$$

15) $-3 - 6v = 2 - 6v + v$

$$v = -5$$

16) $8 + 6a - a = -a + 2a$

$$a = -2$$

17) $-4x + 7(x - 4) = -40 - x$

$$x = -3$$

18) $-21 + x = -2x - 2(7 - x)$

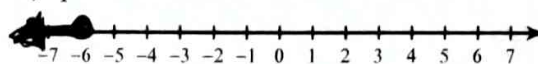
$$x = 7$$

(MFA.EI.1.d) Draw a graph for each inequality.

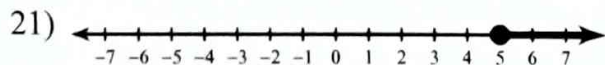
19) $n > -2$



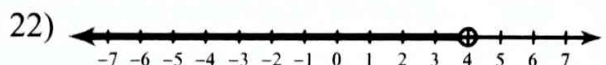
20) $p \leq -6$



Write an inequality for each graph.



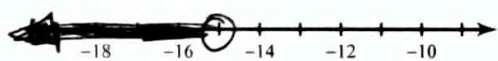
$x \geq 5$



$x < 4$

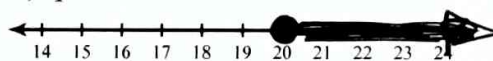
(MFA.EI.1) Solve each inequality and graph its solution.

23) $-3 + b < -18$



$b < -15$

24) $p - 20 \geq 0$



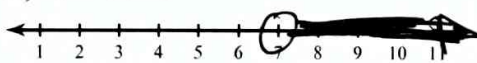
$p \geq 20$

25) $n - 8 > -12$



$n > -4$

26) $b - 6 > 1$



$b > 7$

27) $\frac{x}{2} + 4 \leq -1$



$x \leq -10$

28) $7 + 4k > -1$



$k > -2$

29) $2x + 4(1 + 8x) \geq -98$



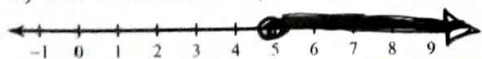
$x \geq -3$

30) $-6(1 + 6x) > 210$



$x < -6$

31) $20 + 8n \geq 5 + 5(n + 6)$



$n \geq 5$

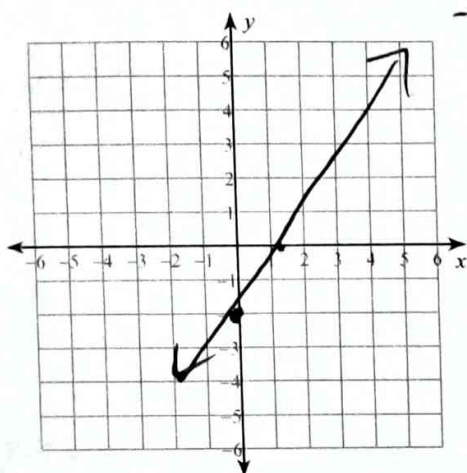
32) $-6n + 19 \geq 5 - 4(1 + 3n)$



$n \geq -3$

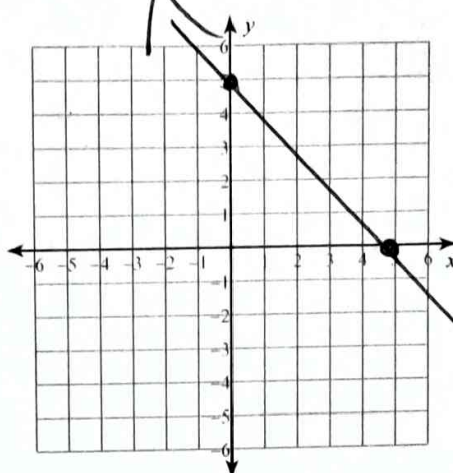
(MFA.QR.2.e) Find the x and y intercepts, then graph the line.

33) $7x - 4y = 8$



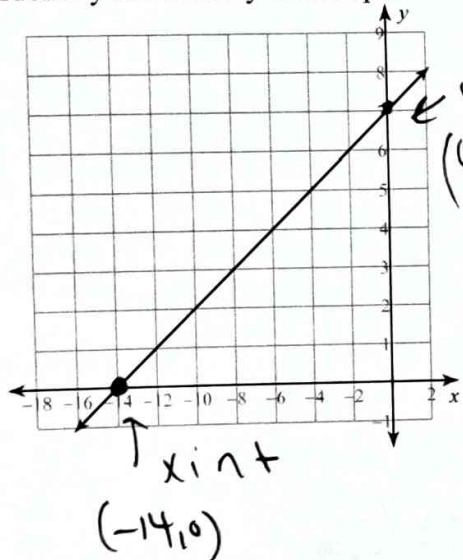
$y \text{ int}$
 $-4y = 8$
 $y = -2$
 $0, -2$
 $x \text{ int}$
 $7x = 8$
 $x = 8/7$
 $x = 1.14$
 $(1.14, 0)$

34) $x + y = 5$



$y \text{ int}$
 $(0, 5)$
 $x \text{ int}$
 $(5, 0)$

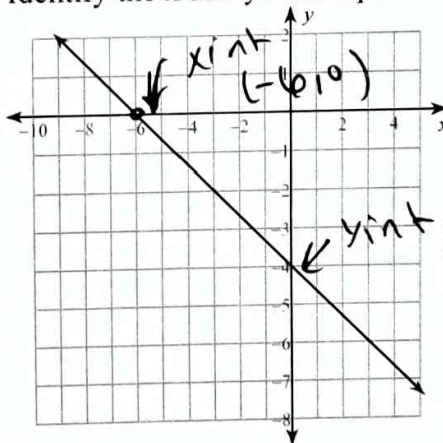
35) Identify the x and y-intercepts.



$y \text{ int}$
 $(0, 7)$

$x \text{ int}$
 $(-14, 0)$

36) Identify the x and y intercepts.

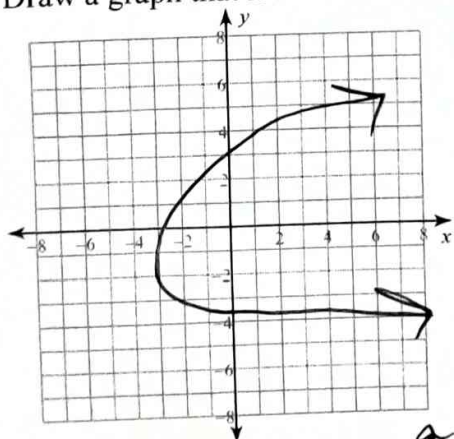


$x \text{ int}$
 $(-6, 0)$

$y \text{ int}$
 $(0, -4)$

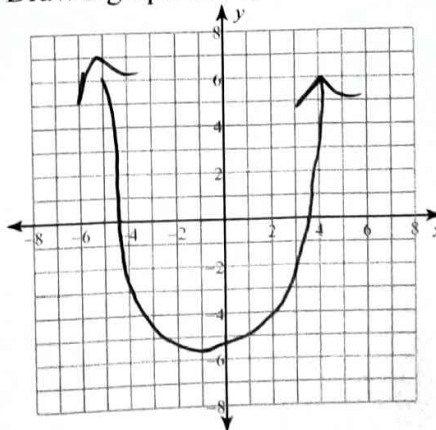
MFA.QR.1.a

37) Draw a graph that is not a function.



Answers may vary ↗

38) Draw a graph that is a function.



MFA.QR.1.b.

39) What is the domain of the following relation?

$\{(1, 3), (-8, 2), (7, 5)\}$

$$D: \{-8, 1, 7\}$$

40) What is the domain of the following relation?

$\{(0, 9), (-2, 7), (4, 8), (3, 1), (-12, -12)\}$

$$D: \{-12, -2, 0, 3, 4\}$$

MFA.QR.1.b

41) What is the range of the following relation?

$\{(-2, 12), (3, 11), (7, -10)\}$

$$R: \{-10, 11, 12\}$$

42) What is the range of the following relation?

$\{(5, -5), (15, 4), (3, 21), (10, 6), (10, 17)\}$

$$R: \{-5, 4, 6, 17, 21\}$$

MFA.QR.1.a

43) Is the following relation a function?

$\{(2, 4), (3, 4), (-3, 6), (2, 5), (7, 10)\}$

NO, $x=2$ has
2 different y 's

MFAQR.3.c

44) Given the following functions:

$$f(x) = 5x - 3 \quad g(x) = x^2 + 6 \quad h(x) = \frac{2x + 1}{4}$$

Find $f(8)$, then write as an ordered pair.

$$f(8) = 5(8) - 3$$

$$= 40 - 3$$

$$f(8) = 37 \quad \rightarrow (8, 37)$$

45) Find $h(-2)$, then write as an ordered pair.

$$h(-2) = \frac{2(-2) + 1}{4} \rightarrow \frac{-4 + 1}{4} = \frac{-3}{4}$$

$$(-2, -\frac{3}{4})$$