

Introductory Algebra (MAT09X) Final Exam Practice

1) Solve:

$$6 - 2(4 - 2x) = 8 - 3(x - 1)$$

$$x + 3(2 + 4x) = 6(x + 1) + 5x$$

$$3 - 2(4 - y) = 6 - 4(3y + 1)$$

$$4(x - 3) - 3(x - 2) = 2x + 8$$

$$1 + 2(3 - 2y) = 5 - 2(3y - 1)$$

$$2x + 5(x - 4) = 4x - 2(x - 10)$$

2) Solve:

$$\frac{x}{3} = \frac{4}{5}$$

$$\frac{x}{5} = \frac{8}{20}$$

$$\frac{2}{x} = \frac{16}{9}$$

$$\frac{21}{x} = \frac{7}{2}$$

$$\frac{8}{2x} = \frac{4}{7}$$

$$\frac{3x}{9} = \frac{1}{6}$$

3) Expand and combine like terms:

$$(3x - 1)^2$$

$$(p + 3)^2$$

$$(-2x - 2)^2$$

$$(4w + 4)^2$$

$$(4 - 3y)^2$$

$$(5x - 7)^2$$

4) Simplify:

$$\frac{(6 - 9)^3 + |-2|}{-3^3 + 4}$$

$$\frac{(2 - 5)^2 + |-5|}{-4^2 - 2}$$

$$\frac{(-2 + 5)^2 + |3|}{-4^2 + 5}$$

$$\frac{(7 - 8)^3 + |2|}{(-4)^2 - 4}$$

$$\frac{(3 + 4)^2 + |10|}{-5^2 + 4}$$

$$\frac{(3 - 9)^2 + |-5|}{5^2 - 20}$$

5) Evaluate:

$$f(x) = 5x + 7$$

$$f(x) = 12x - 7$$

$$f(x) = 2x - 4$$

$$f(x) = x + 8$$

$$f(x) = 10 - 2x$$

$$f(x) = -x + 3$$

$$\text{find } f(-2)$$

$$\text{find } f(3)$$

$$\text{find } f(0)$$

$$\text{find } f(-10)$$

$$\text{find } f(4)$$

$$\text{find } f(7)$$

$$\text{find } f(3)$$

$$\text{find } f(-5)$$

$$\text{find } f(1)$$

$$\text{find } f(13)$$

$$\text{find } f(-3)$$

$$\text{find } f(-2)$$

6) Find the slope of the line passing through the points:

$$(-5, 2) \text{ and } (-1, 10)$$

$$(-3, 2) \text{ and } (-7, 2)$$

$$(4, -4) \text{ and } (-4, 12)$$

$$(5, -9) \text{ and } (3, 4)$$

$$(2, 7) \text{ and } (-2, 7)$$

7) Write each linear equation in slope-intercept form:

$$3x + 2y = 7$$

$$5x - y = 3$$

$$3x + y = -18$$

$$-2x + 3y = 11$$

$$-2x - 3y = 6$$

$$7x - 2y = -10$$

8) Graph the solution:

$$2(4 - 3d) \leq -5d$$

$$5 - x > 7$$

$$3 < 3(2w - 1)$$

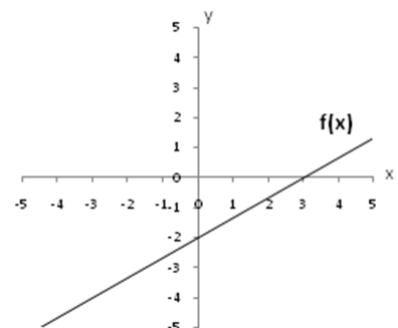
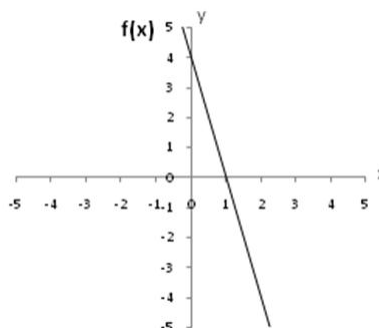
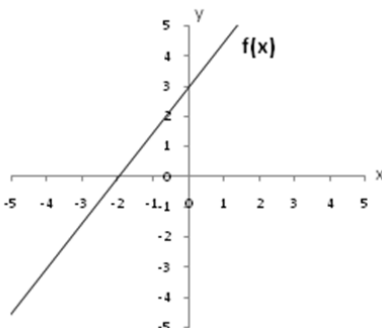
$$-3(7 + 4x) \geq -11x$$

$$11 - y \leq 1$$

$$3x + 4(5x - 7) > 6x - 8$$

9) Identify the slope:

10) Identify the vertical intercept:



1) $x = \frac{13}{7}$ $y = \frac{1}{2}$ or .5 $y = 0$
 $x = 0$ $x = -14$ $x = 8$

2) $x = \frac{12}{5}$ or 2.4 $x = 2$ $x = \frac{9}{8}$ or 1.125 $x = 6$ $x = 7$ $x = \frac{1}{2}$ or .5

3) $9x^2 - 6x + 1$ $p^2 + 6p + 9$ $4x^2 + 8x + 4$ $16w^2 + 32w + 16$ $9y^2 - 24y + 16$ $25x^2 - 70x + 49$

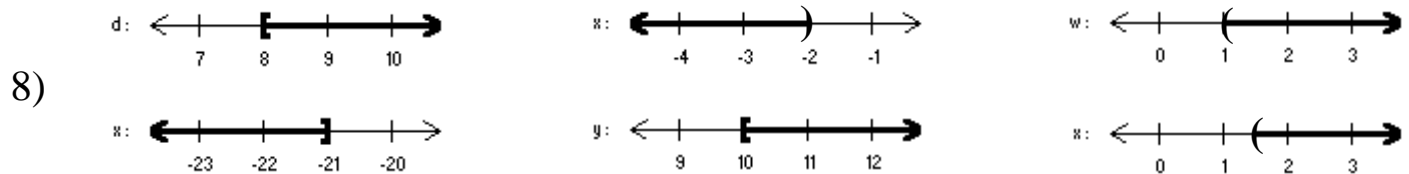
4) $\frac{25}{23}$ $-\frac{7}{9}$ $-\frac{12}{11}$ $\frac{1}{12}$ $-\frac{59}{21}$ $\frac{41}{5}$ or 8.2

5) $f(-2) = -3$ $f(3) = 29$ $f(0) = -4$ $f(-10) = -2$ $f(4) = 2$ $f(7) = -4$
 $f(3) = 22$ $f(-5) = -67$ $f(1) = -2$ $f(13) = 21$ $f(-3) = 16$ $f(-2) = 5$

6) $m = 2$ $m = 0$ $m = -2$ $m = -\frac{13}{2}$ or -6.5 $m = 0$

$y = -\frac{3}{2}x + \frac{7}{2}$ or $y = -1.5x + 3.5$ $y = 5x - 3$ $y = -3x - 18$

7) $y = \frac{2}{3}x + \frac{11}{3}$ $y = -\frac{2}{3}x - 2$ $y = \frac{7}{2}x + 5$ or $y = 3.5x + 5$



9) $m = \frac{3}{2}$ or 1.5 $m = -4$ $m = \frac{2}{3}$

10) (0,3) (0,4) (0,-2)