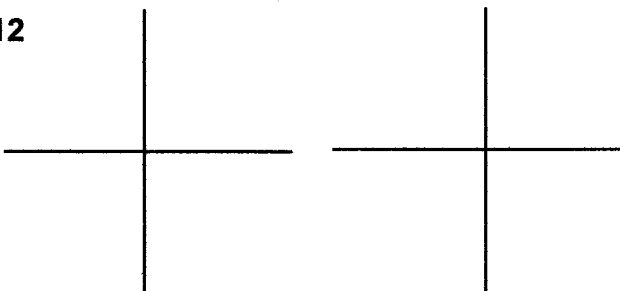


SHOW ALL WORK ON THIS TEST OR ON SEPARATE PAPER. Circle answers.

TURN IN ALL WORKSHEETS. CALCULATORS ARE REQUIRED ON THIS TEST.

1. Graph the equations:

a) $3X - 4Y = 12$ X-int = _____ Y-int = _____ slope = _____		b) $Y = -\frac{2}{3}X + 3$ Y-int = _____ Slope = _____
--	--	--

2. Given the points $(-2, -4)$ and $(-4, 6)$, find:

- a) distance b) slope c) midpoint

3. Find the slope of a line thata) is parallel to $X - 2Y = 4$.b) is perpendicular to
 $X - 2Y = 4$.4. Find the equation of the
line ~~(in standard form)~~
passing through $(-4, 2)$
and perpendicular to
 $X - 2Y = 4$

In 5 - 8, solve the systems of equations:

5. $2X - 3Y = 1$
 $X + Y = 8$

6. $4X - 3Y = -6$
 $-8X + 6Y = 12$

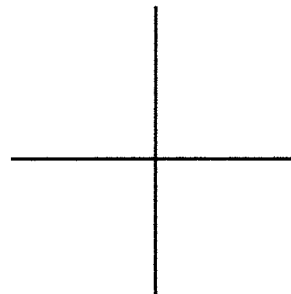
7. $5X + 6Y = 5$
 $6X + 5Y = -5$

8. $6X + 7Y = -19$
 $Y = -3X + 8$

9. Graph the intersection of the inequalities:

$$2X - Y \leq -2$$

$$Y > -X + 3$$



10. If $f(X) = 3X - 4$ and $g(X) = X^2 - 4X + 5$

a) $f(-5) =$

d) $f[g(X)] =$

b) $g(-5) =$

c) $f(5X) =$

e) $g[f(X)] =$

11. Find the domain (give interval notation when appropriate):

a) $Y = \frac{3X}{X + 3}$

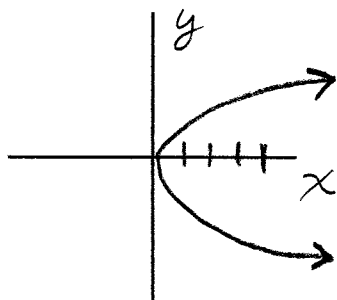
b) $Y = X^2 - 4$

c) $Y = \frac{X + 6}{\sqrt{4 - X}}$

d) $Y = \sqrt{6 + X}$

12. Find the domain and range of each of the following graphs. Determine whether each is a function or not a function.

A)

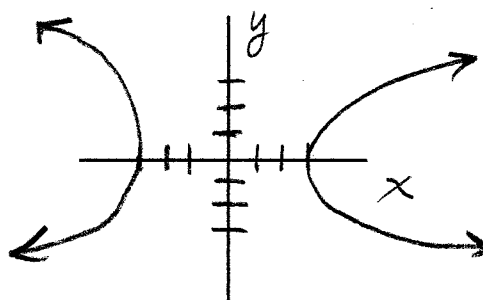


Function? _____

Domain: _____

Range: _____

B)



Function? _____

Domain: _____

Range: _____

INTERMEDIATE ALGEBRA - EXAM 4G* Solutions.

1a) $3x - 4y = 12$

$x_{int} (4, 0)$

$y_{int} (0, -3)$

$3x - 4y = 12$

$-4y = -3x + 12$

$y = \frac{3}{4}x - 3$

$m = \frac{3}{4}$

3. $x - 2y = 4$

$-2y = -x + 4$

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

$m = \frac{1}{2}$

$m_{parallel} = \frac{1}{2}$

$m_{\perp} = -\frac{2}{1}$

5. $2x - 3y = 1$

$-2(x + y = 8)$

$2x - 3y = 1$

$-2x - 2y = -16$

$-5y = -15$

$y = 3$

$2x - 9 = 1$

$2x = 10$

$x = 5$

$(5, 3)$

$C_1 = x + y = 8$
 $5 + 3 = 8$

9. $2x - y \leq -2$

$\begin{array}{r|l} x & y \\ 0 & 2 \\ -1 & 0 \end{array}$

Solid Line

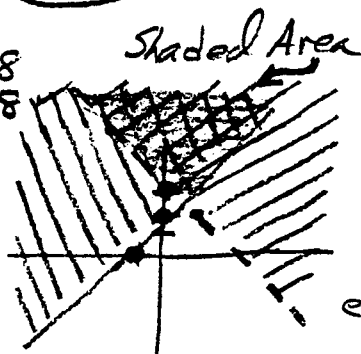
Shade Above

$y > -x + 3$

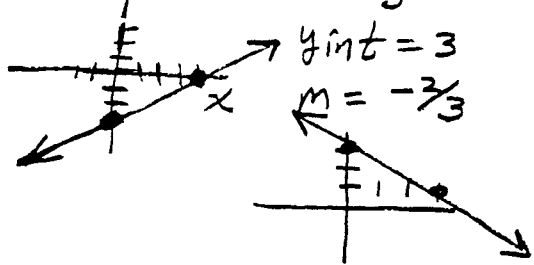
$y_{int} = 3, m = -1$

Dotted Line

Shade above.



a) y



a) $y = -\frac{2}{3}x + 3$

2 $(-2, -4) (-4, 6)$

a) $d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

$= \sqrt{10^2 + 2^2}$

$= \sqrt{100 + 4} = \sqrt{104} = 2\sqrt{26}$

or $(10, 20)$

b) $m = \frac{y_2 - y_1}{x_2 - x_1}$

$= \frac{6 - (-4)}{-4 - (-2)} = \frac{10}{-2} = -5$

c) midpoint $(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$

$(\frac{-6 + 2}{2}, \frac{2}{2}) = (-3, 1)$

4. $(-4, 2) m_{\perp} = -2$ (See #3!)

$y = mx + b$

$2 = -2(-4) + b$

$2 = 8 + b$

$b = -6$

$y = -2x - 6$

6. $4x - 3y = -6$

$-8x + 6y = 12$

$8x - 6y = -12$

$-8x + 6y = 12$

$0 = 0$

Some Line

7. $5x + 6y = 5$

$-6(6x + 5y = -5)$

$25x + 30y = 25$

$-36x - 30y = 30$

$-11x = 55$

$x = -5$

$-25 + 6y = 5$

$6y = 30$

$y = 5$

$(-5, 5)$

$C_1 = 6x + 5y = -5$

$-30 + 25 = -5$

8. $6x + 7y = -19$

$y = -3x + 8$

$6x + 7(-3x + 8) = -19$

$6x - 21x + 56 = -19$

$-15x = -75$

$x = 5$

$y = -3(5) + 8$

$y = -7$

$C_1 = 6x + 7y = -19$

$6(5) + 7(-7) = -19$

$30 - 49 = -19$

10c) $f(x) = 3x - 4$

$f(5x) = 3(5x) - 4$

$= 15x - 4$

d) $f[g(x)] = 3(x^2 - 4x + 5) - 4$

$= 3x^2 - 12x + 11$

e) $g[f(x)] = (3x - 4)^2 - 4(3x - 4) + 5$

$= 9x^2 - 24x + 16 - 12x + 16 + 5$

$= 9x^2 - 36x + 37$

10a) $f(x) = 3x - 4$

$f(-5) = -15 - 4$

$= -19$

b) $g(x) = x^2 - 4x + 5$

$g(-5) = (-5)^2 - 4(-5) + 5$

$= 25 + 20 + 5$

$= 50$

11a) $y = \frac{3x}{x+3}$

$D = \text{all } x \neq -3$

b) $y = x^2 - 4$

No Restrict.

All Reals

$(-\infty, \infty)$

c) $y = \frac{x+6}{\sqrt{4-x}}$

$D = 4 - x > 0$

$-x > -4$

$x < 4$

$(-\infty, 4)$

d) $y = \sqrt{6+x}$

$D = 6+x \geq 0$

$x \geq -6$

$[-6, \infty)$

12A) F: No

$D = [0, \infty)$

$R = (-\infty, \infty)$ or all reals

12B) F: No

$D = (-\infty, -3] \cup [3, \infty)$

$R = (-\infty, \infty)$ or all reals