M031048

VIDEOS
Math 031048

1. $4(3w+4)=2(4w+24)$ M031V13
2. $-7x+3(2x-4)=-9-4x$ M031V14
3. $4.2p-19=5.2p-7$ M031V15
4. $\frac{9}{10}x+\frac{3}{5}=\frac{4}{5}x$ M031V16
5. $-7x+8+5x=-2x+13$ M031V17
6. $3x+y=15$ find y M031V20
7. $15x+2y=15$ find y M031V21
8. $A=P(1+rt)$ find t M031V22
9. $7x>28$ M031V25
10. $-7x\geq 21$ M031V26
11. $36-6x\geq -6$ M031V27
12. $y=2x-2$ graph M031V28
13. $h(x)=-3x-5$ graph M031V29
14. $f(x)=\frac{1}{2}x+3$ graph M031V30
15. $f(x)=5x^2+4x+2$, $f(-4)$ M031V32
16. $f(x)=|x-7|$, $f(-9)$ M031V33
17. $h(x)=\frac{x^2-4}{x}$, $h(-4)$ M031V34
18. $(4x^8y^{-6}z)^{-2}$ M031V35

1.

VIDEOS
Math 031048

103016

(19.) $\left(\frac{5x^4y^5}{7z^{10}}\right)^2$ M03/10V36

(20) $(10z-10)+(z^2-z+2)$ M03/10V37

(21) $(8x^2-5x+20)-(3x^2+5x-40)$ M03/10V38

(22) $(6x^4-5x^2+x)-(9x^3+4x^2+8x)+(3x^2-x)$ M03/10V39

(23.) $P(x)=-4x^2+5x+2$, $P(2)$ M03/10V41

(24.) $(z+4)(z+9)$ M03/10V42

(25.) $(x+1)(x^2-x+1)$ M03/10V43

(26.) $(7b+3)^2$ M03/10V44

(27.) $(4x-11y)^2$ M03/10V45

(28.) $(10a+3b)(10a-3b)$ M03/10V46

(29.) $\frac{19x^7y^7z^3}{76x^5y^9}$ M03/10V47

(30.) $(6x^2-25x-13)\div(x-5)$ M03/10V48

(31.) $36k^2-169m^2$ factor M03/10V54

(32) $x^2-7x-18$ factor M03/10V68

(33) $2x^2+4x-30$ factor M03/10V69

(34) $x^2-10x+25=0$ Solve M03/10V75

2.

VIDEOS
Math 0310 48

Use 0320 Videos 10 30 16

3.

(35) $5x > -20$ M0320V1

(36) $18 - 3x \geq -12$ M0320V2

(37.) $9x - 8 \leq 4x - 12$ M0320V3

(38.) $y = 2x - 2$ graph M0320V11

(39.) $2x - 3y = 6$ graph M0320V12

(40.) (8, 3) and (−4, 4) find slope M0320V15

(41) $y = 4x - 5$ find slope & y-intercept M0320V18

(42) $m = 3$, $(-3, 6)$ Find Equation of line M0320V19

(43) $y = 6x - 8$
$y = -\frac{1}{6}x - 1$
Parallel, perpendicular, Neither
M0320V21

(44.) $y = 9x - 6$
$y = 9x + 4$
Parallel, perpendicular, Neither
M0320V22

(45.) $x + y = 10$
$3x + 5y = 16$
solve M0320V39

(46) $6x + 9y = 2$
$3y = -2x + 4$
Solve M0320V40

(47.) $x - y = 7$
$x + y = 5$
Solve M0320V41

(48.) $4x + 3y = 8$
$5x + 4y = 11$
Solve M0320V42

(4)

(1) $4(3w+4)=2(4w+24)$

$12w+16=8w+48$

$12w+16-16=8w+48-16$

$12w=8w+32$

$12w-8w=8w+32-8w$

$4w=32$

$\frac{4w}{4}=\frac{32}{4}$

$w=8$

(2.) $-7x+3(2x-4)=-9-4x$

$-7x+6x-12=-9-4x$

$-1x-12=-9-4x$

$-1x-12+12=-9-4x+12$

$-1x=-4x+3$

$-1x+4x=-4x+3+4x$

$3x=3$

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

$x=1$

5.

(3.) $4.2p - 19 = 5.2p - 7$

$4.2p - 19 + 19 = 5.2p - 7 + 19$

$4.2p = 5.2p + 12$

$4.2p - 5.2p = 5.2p + 12 - 5.2p$

$-1p = 12$

$\frac{-1p}{-1} = \frac{12}{-1}$

$p = -12$

(4.) $\frac{9x}{10} + \frac{3}{5} = \frac{4x}{5}$ LCD = 10

$\frac{9x}{10}(10) + \frac{3}{5}(10) = \frac{4x}{5}(10)$

$9x(1) + 3(2) = 4x(2)$

$9x + 6 = 8x$

$9x + 6 - 6 = 8x - 6$

$9x = 8x - 6$

$9x - 8x = 8x - 6 - 8x$

$1x = -6$

$x = -6$

5. $-7x+8+5x=-2x+13$

$-2x+8=-2x+13$

$-2x+8-8=-2x+13-8$

$-2x=-2x+5$

$-2x+2x=-2x+5+2x$

$0 \neq 5$

No solution

$\emptyset$

$\{\}$

6. Solve for y

$3x+y=15$

$3x+y-3x=15-3x$

$y=15-3x$

$y=-3x+15$ rewrite

(7) Solve for y

$$15x + 2y = 15$$

$$15x + 2y - 15x = 15 - 15x$$

$$2y = 15 - 15x$$

$$\frac{2y}{2} = \frac{15}{2} - \frac{15x}{2}$$

$$y = \frac{15}{2} - \frac{15x}{2}$$

$$y = -\frac{15x}{2} + \frac{15}{2}$$ rewrite

(8) Solve for t

$$A = P(1 + rt)$$

$$A = P + Prt$$

$$A - P = P + Prt - P$$

$$A - P = Prt$$

$$\frac{A - P}{Pr} = \frac{Prt}{Pr}$$

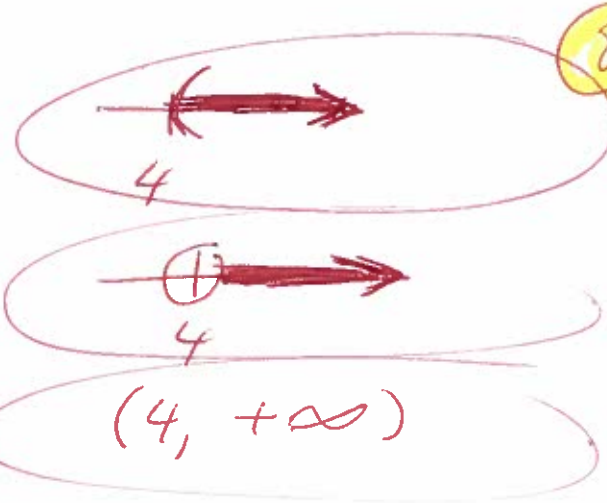
$$\frac{A - P}{Pr} = t$$

(9.) $7x > 28$

$\frac{7x}{7} > \frac{28}{7}$

$x > 4$

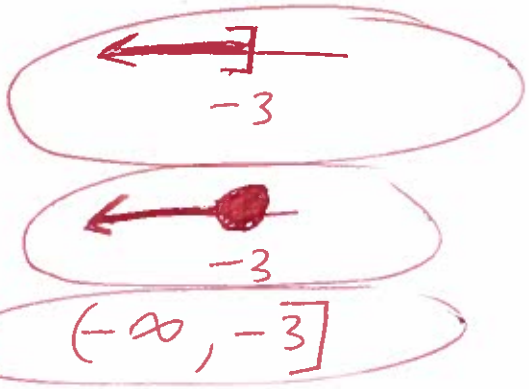
(8.)



(10.) $-7x \geq 21$

$\frac{-7x}{-7} \leq \frac{21}{-7}$ Turn the alligator around.

$x \leq -3$



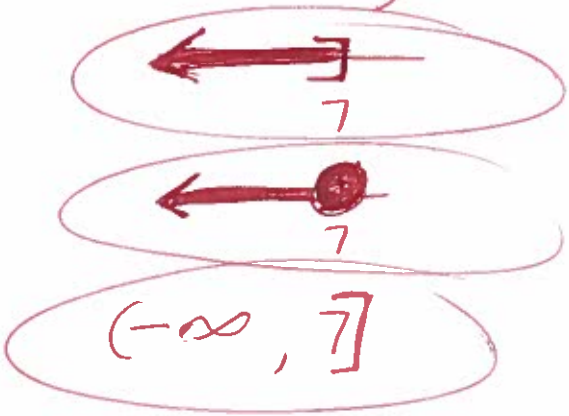
(11.) $36 - 6x \geq -6$

$36 - 6x - 36 \geq -6 - 36$

$-6x \geq -42$

$\frac{-6x}{-6} \leq \frac{-42}{-6}$ Turn the alligator around

$x \leq 7$



(12) graph

$y = 2x - 2$

$y = 2(0) - 2$

$y = 0 - 2$

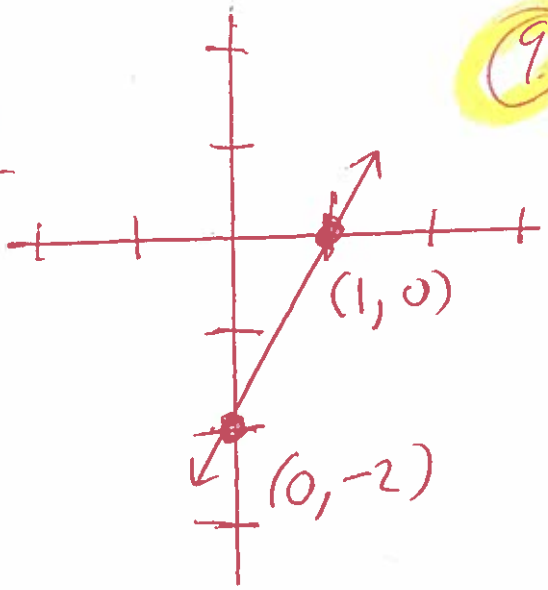
$y = -2$

$y = 2(1) - 2$

$y = 2 - 2$

$y = 0$

x	y
0	-2
1	0



(9)

(13) graph

$h(x) = -3x - 5$

$h(0) = -3(0) - 5$

$h(0) = 0 - 5$

$h(0) = -5$

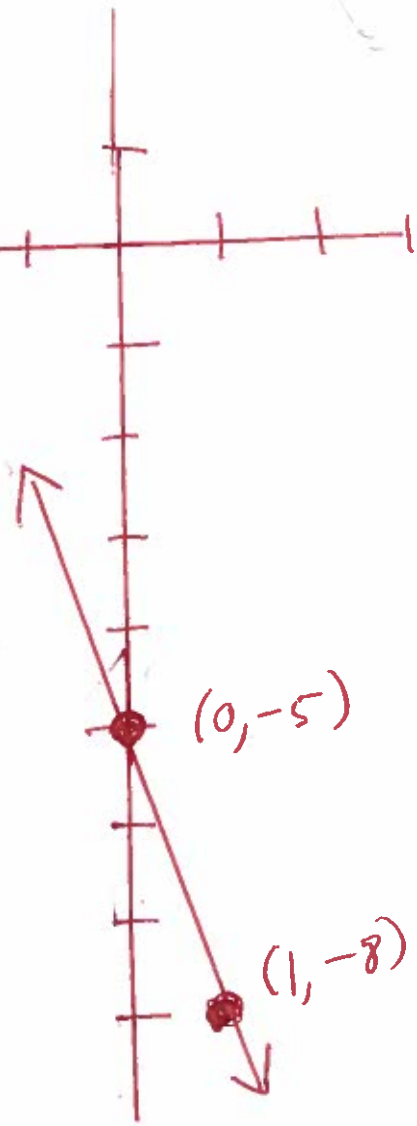
$h(1) = -3(1) - 5$

$h(1) = -3 - 5$

$h(1) = -8$

h(x)

x	y
0	-5
1	-8



(14) graph $f(x) = \frac{1}{2}x + 3$

$f(0) = \frac{1}{2}(0) + 3$

$f(0) = 0 + 3$

$f(0) = 3$

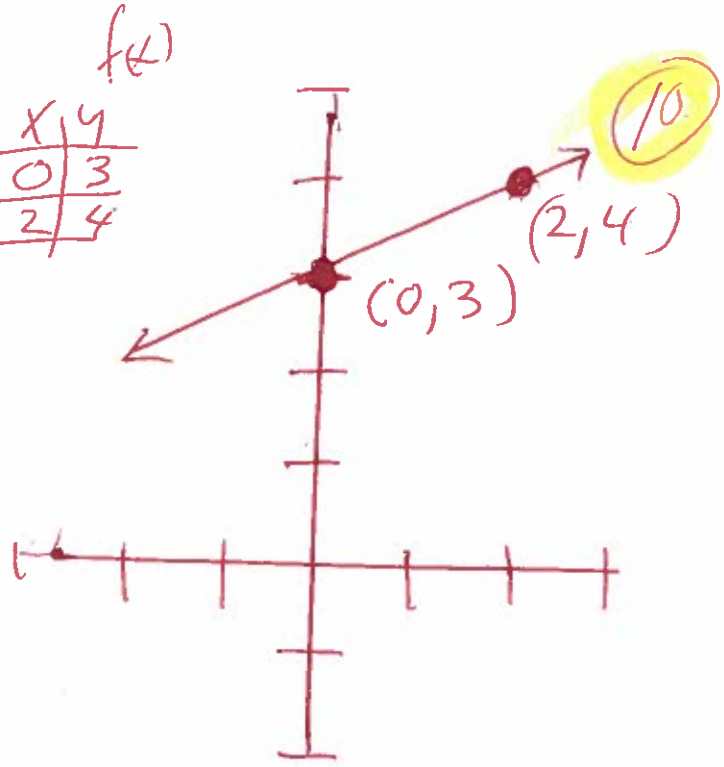
$f(2) = \frac{1}{2}(2) + 3$

$f(2) = 1 + 3$

$f(2) = 4$

f(x)

x	y
0	3
2	4



(15) $f(x) = 5x^2 + 4x + 2$, find $f(-4)$

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

$f(-4) = 5(-4)(-4) + 4(-4) + 2$

$f(-4) = 5(16) + 4(-4) + 2$

$f(-4) = 80 - 16 + 2$

$f(-4) = 64 + 2$

$f(-4) = 66$ OR $(-4, 66)$

(16) $f(x) = |x-7|$, find $f(-9)$

(11)

$f(-9) = |(-9)-7|$

$f(-9) = |-9-7|$

$f(-9) = |-16|$

$f(-9) = 16$ OR $(-9, 16)$

(17) $h(x) = \frac{x^2-4}{x}$, find $h(-4)$

$h(-4) = \frac{(-4)^2-4}{(-4)}$

$h(-4) = \frac{(-4)(-4)-4}{-4}$

$h(-4) = \frac{16-4}{-4}$

$h(-4) = \frac{12}{-4}$

$h(-4) = -3$ OR $(-4, -3)$

(18) $(4x^{8}y^{-6}z)^{-2} =$

$(4^{1}x^{8}y^{-6}z^{1})^{-2} =$

$4^{1(-2)}x^{8(-2)}y^{-6(-2)}z^{1(-2)} =$

$4^{-2}x^{-16}y^{12}z^{-2} =$

$\frac{y^{12}}{4^{2}x^{16}z^{2}} =$ rewrite with positive powers

$\frac{y^{12}}{(4)(4)x^{16}z^{2}} =$

$\frac{y^{12}}{16x^{16}z^{2}} =$

(12)

(19) $\left(\frac{5x^4y^5}{7z^{10}}\right)^2 =$

$\left(\frac{5^1x^4y^5}{7^1z^{10}}\right)^2 =$

$\frac{5^{1(2)}x^{4(2)}y^{5(2)}}{7^{1(2)}z^{10(2)}} =$

$\frac{5^2x^8y^{10}}{7^2z^{20}} =$

$\frac{(5)(5)x^8y^{10}}{(7)(7)z^{20}} =$

$\frac{25x^8y^{10}}{49z^{20}} =$

20. $(10z-10)+(z^2-z+2)=$

$10z-10+z^2-z+2=$

$z^2+9z-8=$

21. $(8x^2-5x+20)-(3x^2+5x-40)=$

$8x^2-5x+20-3x^2-5x+40=$

$5x^2-10x+60=$

22. $(6x^4-5x^2+x)-(9x^3+4x^2+8x)+(3x^2-x)=$

$6x^4-5x^2+x-9x^3-4x^2-8x+3x^2-x=$

$6x^4-9x^3-6x^2-8x=$

23. $P(x)=-4x^2+5x+2$, find $P(2)$

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

$P(2)=-4(2)(2)+5(2)+2$

$P(2)=-4(4)+5(2)+2$

$P(2)=-16+10+2$

$P(2)=-6+2$

$P(2)=-4$ OR $(2,-4)$

24. $(z+4)(z+9) =$

$z^2 + 9z + 4z + 36 =$

$z^2 + 13z + 36 =$

25. $(x+1)(x^2 - x + 1) =$

$x^3 - x^2 + 1x + 1x^2 - 1x + 1 =$

$x^3 + 1 =$

26. $(7b+3)^2 =$

$(7b+3)(7b+3) =$

$49b^2 + 21b + 21b + 9 =$

$49b^2 + 42b + 9 =$

27. $(4x-11y)^2 =$

$(4x-11y)(4x-11y) =$

$16x^2 - 44xy - 44xy + 121y^2 =$

$16x^2 - 88xy + 121y^2 =$

(28) $(10a+3b)(10a-3b) =$

$100a^2 - 30ab + 30ab - 9b^2 =$

$100a^2 - 9b^2 =$

(29) $\frac{19x^7y^7z^3}{76x^5y^9} =$

$\frac{19(1)x^7y^7z^3}{19(4)x^5y^9} =$

$\frac{1x^{7-5}z^3}{4y^{9-7}} =$

$\frac{1x^2z^3}{4y^2} =$

$\frac{x^2z^3}{4y^2} =$

(30) $(6x^2-25x-13) \div (x-5) =$ (17)

$$\frac{6x^2-25x-13}{x-5} =$$

Synthetic division

OPP

$5 \;|\; 6 \quad -25 \quad -13$

$\qquad\quad 30 \quad\; 25$

$6 \quad 5 \quad 12$ rem

$$6x+5+\frac{12}{x-5}$$

$$6x+5+\frac{12}{x-5}$$

Long division

$$x-5 \;\overline{)\; 6x^2-25x-13}$$

$$-(6x^2 \oplus 30x)$$

$$5x-13$$

$$-(5x \oplus 25)$$

$$12 \text{ rem}$$

18

$a^2 - b^2 = (a+b)(a-b)$

31. factor

$36k^2 - 169m^2 =$

$(6k)^2 - (13m)^2 =$

$(6k + 13m)(6k - 13m) =$

32. factor

$x^2 - 7x - 18 =$

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

18 · 1
9 · 2
6 · 3
possible factors

33. factor

$2x^2 + 4x - 30 =$

$2(x^2 + 2x - 15) =$

$2(x - 3)(x + 5) =$

15 · 1
3 · 5
possible

34. Solve

25 · 1
5 · 5
possible

$x^2 - 10x + 25 = 0$

$(x - 5)(x - 5) = 0$

Set $x - 5 = 0$ OR $x - 5 = 0$

$x - 5 + 5 = 0 + 5$ OR $x - 5 + 5 = 0 + 5$

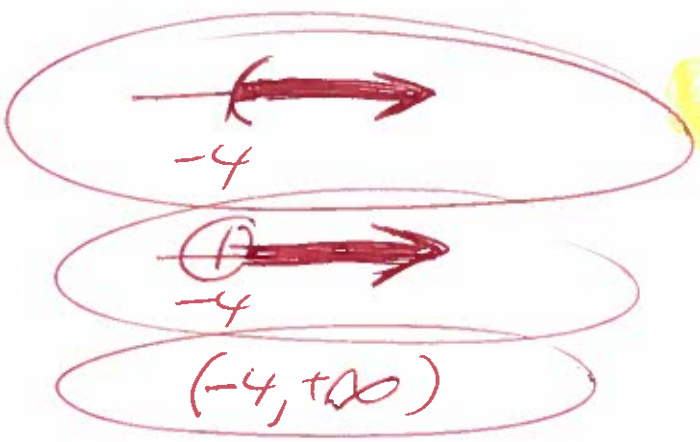
$x = 5$ OR $x = 5$

$\{5\}$

(35.) $5x > -20$

$\frac{5x}{5} > \frac{-20}{5}$

$x > -4$



(36.) $18 - 3x \geq -12$

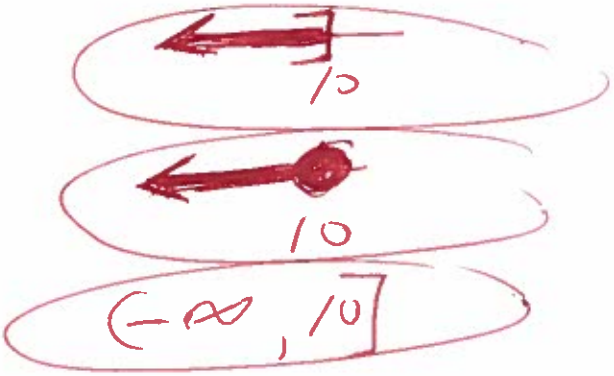
$18 - 3x - 18 \geq -12 - 18$

$-3x \geq -30$

$\frac{-3x}{-3} \leq \frac{-30}{-3}$

$x \leq 10$

Turn the alligator around



(37.) $9x - 8 \leq 4x - 12$

$9x - 8 + 8 \leq 4x - 12 + 8$

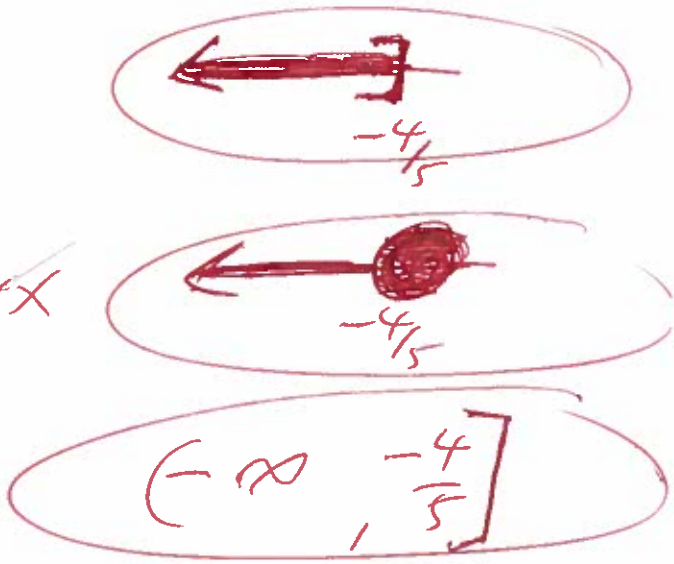
$9x \leq 4x - 4$

$9x - 4x \leq 4x - 4 - 4x$

$5x \leq -4$

$\frac{5x}{5} \leq \frac{-4}{5}$

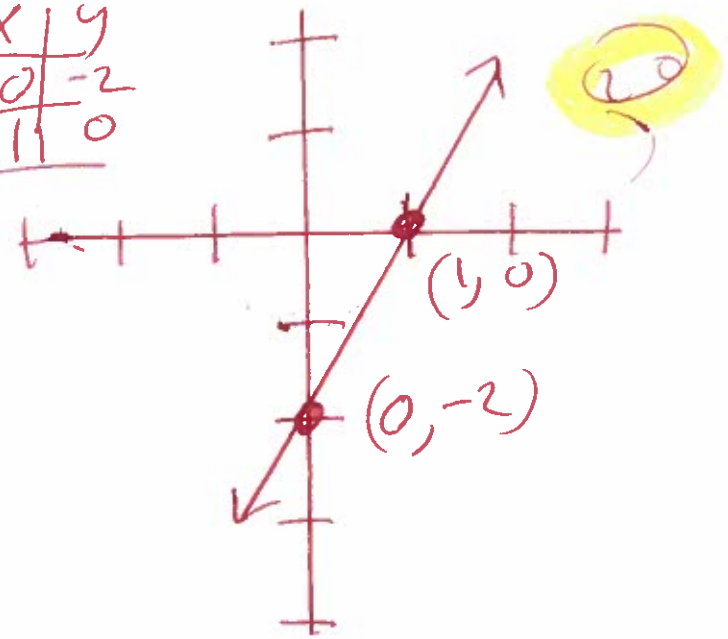
$x \leq -4/5$



(38.) graph

$y = 2x - 2$

x	y
0	-2
1	0



$y = 2(0) - 2$

$y = 0 - 2$

$y = -2$

$y = 2(1) - 2$

$y = 2 - 2$

$y = 0$

(39) graph

$2x - 3y = 6$

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

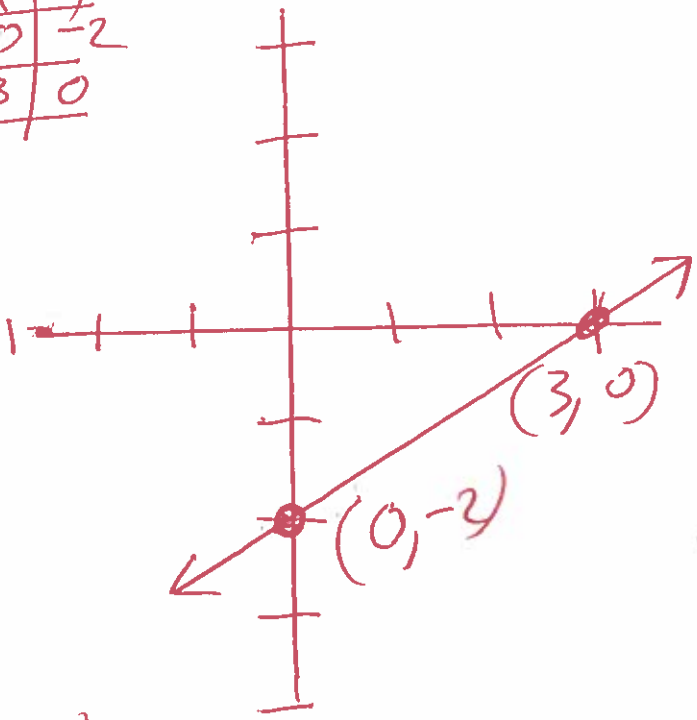
$-3y = 6 - 2x$

$\frac{-3y}{-3} = \frac{6}{-3} - \frac{2x}{-3}$

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

$y = \frac{2}{3}x - 2$

x	y
0	-2
3	0



$y = \frac{2}{3}(0) - 2$

$y = 0 - 2$

$y = -2$

$y = \frac{2}{3}(3) - 2$

$y = 2 - 2$

$y = 0$

(40) Find the slope of the line through points $(8, 3)$ and $(-4, 4)$.

$x_1\ y_1 \qquad x_2\ y_2$

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

$$m = \frac{(3) - (4)}{(8) - (-4)}$$

$$m = \frac{3 - 4}{8 + 4}$$

$$m = \frac{-1}{12}$$

(41.) Find the slope & y-intercept

$$y = 4x - 5$$

$y = mx + b$ $\quad$ m = slope, y-intercept $(0, b)$

$m = 4 =$ slope

y intercept $= (0, -5)$

(42) Find the equation of the line with slope $= 3 = m$ at point $(-3, 6)$. $x_1 \quad y_1$

$y - y_1 = m(x - x_1)$

$y - (6) = 3(x - (-3))$

$y - 6 = 3(x + 3)$

$y - 6 = 3x + 9$

$y - 6 + 6 = 3x + 9 + 6$

$y = 3x + 15$

(43) $y = 6x - 8$ Parallel, Perpendicular, neither?

$y = -\frac{1}{6}x - 1$

$m_1 = 6 =$ slope of Line 1

$m_2 = -\frac{1}{6} =$ Slope of Line 2

since $m_2 = -\frac{1}{6} = \frac{-1}{m_1}$ then

Lines are perpendicular

(44) $y = 9x - 6$
$y = 9x + 4$

Parallel, perpendicular, neither

$m_1 = 9$ = slope of Line 1

$m_2 = 9$ = slope of Line 2

Since $m_1 = m_2 = 9$

So lines are parallel

(45.) $x + y = 10$
$3x + 5y = 16$

Solve by substitution

$x + y - y = 10 - y$
$x = 10 - y$

$3x + 5y = 16$

$3(10 - y) + 5y = 16$
$30 - 3y + 5y = 16$
$30 + 2y = 16$
$30 + 2y - 30 = 16 - 30$
$2y = -14$
$\frac{2y}{2} = \frac{-14}{2}$
$y = -7$

subst

$x + y = 10$
$x + (-7) = 10$
$x - 7 = 10$
$x - 7 + 7 = 10 + 7$
$x = 17$

$(x, y) = (17, -7)$

(46) $6x + 9y = 2$

$3y = -2x + 4$

Solve by elimination

24

$6x + 9y = 2$

$2x + 3y = 4$ rewrite

$(6x + 9y = 2)(-3)$

$(2x + 3y = 4)(9)$ Mult

$-18x - 27y = -6$

$18x + 27y = 36$

$0 + 0 = 30$

$0 \neq 30$

NO solution

$\emptyset$

$\{\}$

(47) $x - y = 7$

$x + y = 5$

Solve by elimination

$2x + 0 = 12$

$2x = 12$

$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

Subst

$x - y = 7$

$(6) - y = 7$

$6 - y = 7$

$6 - y - 6 = 7 - 6$

$-y = 1$

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

$y = -1$

(x, y)

$(6, -1)$

(48) $4x+3y=8$ Solve by elimination (25)

$5x+4y=11$

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

$(5x+4y=11)(3)$

$-16x-12y=-32$

$15x+12y=33$

$-1x+0=1$

$-1x=1$

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

$x=-1$

Subst

$4x+3y=8$

$4(-1)+3y=8$

$-4+3y=8$

$-4+3y+4=8+4$

$3y=12$

$\frac{3y}{3}=\frac{12}{3}$

$y=4$

$(x,y)=(-1,4)$