1. $2(5x-2)=8x$

$10x-4=8x$

$10x-4+4=8x+4$

$10x=8x+4$

$10x-8x=8x+4-8x$

$2x=4$

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

$x=2$

1.

M04/0 TEST 3 Step

071017

2. $1.1x+4.3=0.7x+1.14$

$1.1x+4.3-4.3=0.7x+1.14-4.3$

$1.1x=0.7x-3.16$

$1.1x-0.7x=0.7x-3.16-0.7x$

$.4x=-3.16$

$\frac{.4x}{.4}=\frac{-3.16}{.4}$

$x=-7.9$

(3) $\frac{5}{6}x + \frac{4}{3} = \frac{2}{3}x$ LCD = 6

$\frac{5x}{6}(6) + \frac{4}{3}(6) = \frac{2x}{3}(6)$ Mult

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

$5x + 8 = 4x$

$5x + 8 - 8 = 4x - 8$

$5x = 4x - 8$

$5x - 4x = 4x - 8 - 4x$

$1x = -8$

$x = -8$

(4) $9x + 5 - 9x - 5 = 6x - 6x - 3$

$0 \neq -3$

no solution

5. $2(x+5) = (2x+10)$

$2x+10 = 2x+10$

$2x+10-10 = 2x+10-10$

$2x = 2x$

$2x-2x = 2x-2x$

$0 = 0$

all real numbers

6. $A = P+PRT$ Solve for T

$A-P = P+PRT-P$

$A-P = PRT$

$\frac{A-P}{PR} = \frac{PRT}{PR}$

$\frac{A-P}{PR} = T$

7. $21x+9>3(6x+4)$

$21x+9>18x+12$

$21x+9-9>18x+12-9$

$21x>18x+3$

$21x-18x>18x+3-18x$

$3x>3$

$\frac{3x}{3}>\frac{3}{3}$

$x>1$

$(1,+\infty)$

8. Determine if $(5,0)$ is a solution
$x \quad y$

$-2y+3x=-15$ ?

$-2(0)+3(5)=-15$ ?

$0+15=-15$ ?

$15 \neq -15$ NO

9. Graph $y = 2x + 4$

$y = 2(0) + 4$

$y = 0 + 4$

$y = 4$

$y = 2(1) + 4$

$y = 2 + 4$

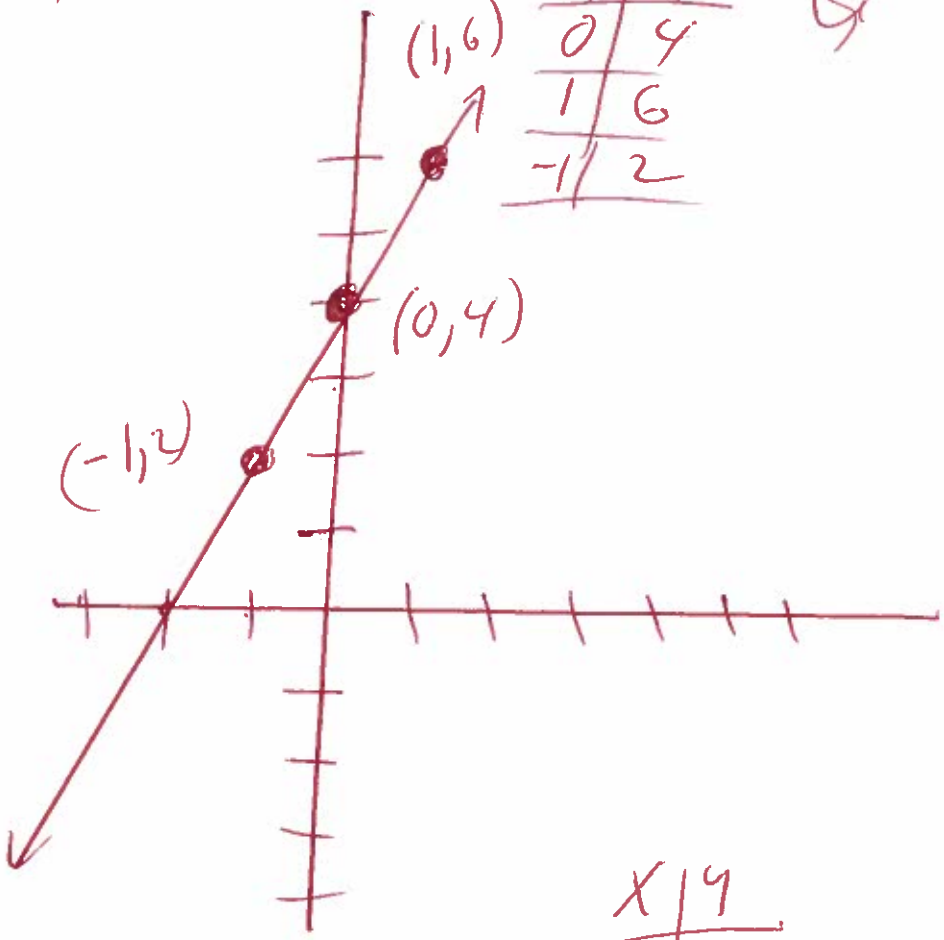
$y = 6$

$y = 2(-1) + 4$

$y = -2 + 4$

$y = 2$

| x | y |
|---|---|
| 0 | 4 |
| 1 | 6 |
| -1 | 2 |




9

10. Graph

$5y - 25x = 10$

$5y - 25x + 25x = 10 + 25x$

$5y = 10 + 25x$

$\frac{5y}{5} = \frac{10}{5} + \frac{25x}{5}$

$y = 2 + 5x$

$y = 5x + 2$

$y = 5(0) + 2$

$y = 0 + 2$

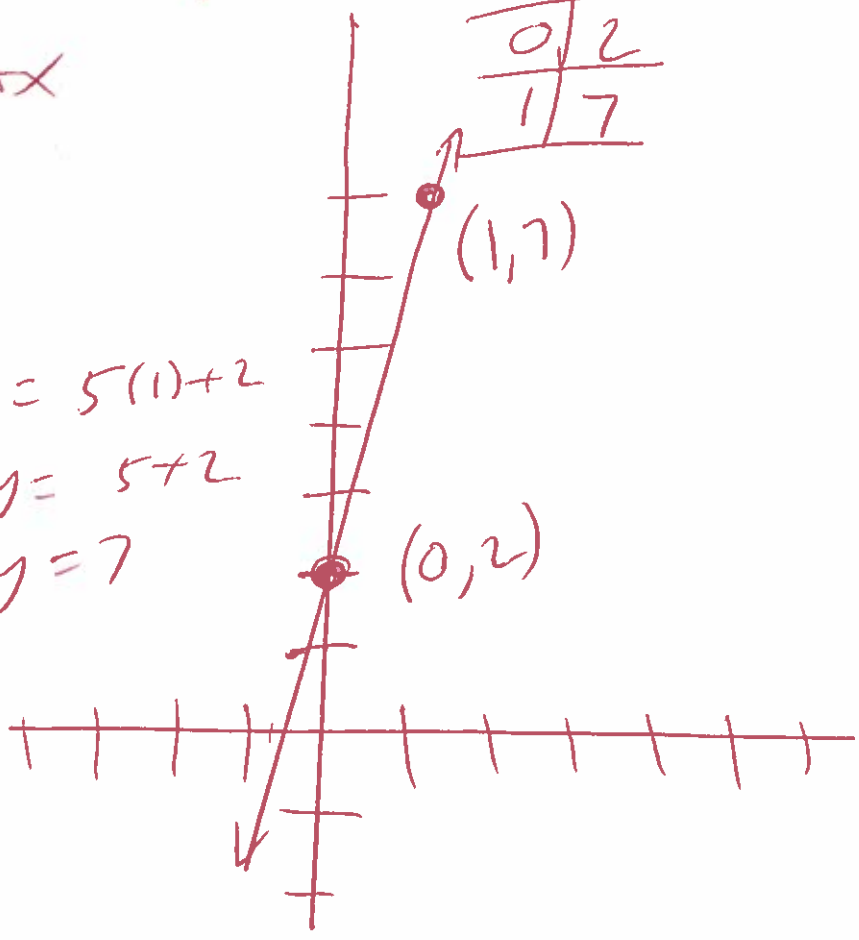
$y = 2$

$y = 5(1) + 2$

$y = 5 + 2$

$y = 7$

| x | y |
|---|---|
| 0 | 2 |
| 1 | 7 |



(11) Find the slope of the line through the points (8, 5) and (6, 9) (6)

$x_1\ y_1 \qquad x_2\ y_2$

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

$$m = \frac{(5) - (9)}{(8) - (6)}$$

$$m = \frac{5 - 9}{8 - 6}$$

$$m = \frac{-4}{2}$$

$$m = -2$$

(12) Find the equation of the line with point slope (5, 2) $m = 2$ = slope

$x_1\ y_1$

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

$$y - (2) = 2(x - (5))$$

$$y - 2 = 2(x - 5)$$

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

$$y - x + x = 2x - 10 + 2$$

$$y = 2x - 8$$

13. Find $f(4)$ when $f(x) = x^2 + 4x - 3$

$f(4) = (4)^2 + 4(4) - 3$

$f(4) = (4)(4) + 4(4) - 3$

$f(4) = 16 + 16 - 3$

$f(4) = 32 - 3$

$f(4) = 29$

14. $-2x + 3y = 2$

$-3x + 5y = 2$

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

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

$10x - 15y = -10$

$-9x + 15y = 6$

$1x = -4$

$x = -4$

Subst

$-2x + 3y = 2$

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

$8 + 3y = 2$

$-8 + 3y - 8 = 2 - 8$

$3y = -6$

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

$y = -2$

$(x, y) = (-4, -2)$

15. Solve

$$x+y=7$$
$$x+y=4$$

$$\begin{pmatrix} x+y=7 \\ x+y=4 \end{pmatrix}\begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

$$-1x-1y=-7$$
$$1x+1y=4$$

$$0 \neq -3$$

No solution

16. $$-2x+2y=-5$$
$$6x-6y=15$$

$$\begin{pmatrix} -2x+2y=-5 \\ 6x-6y=15 \end{pmatrix}\begin{pmatrix} 6 \\ 2 \end{pmatrix}$$

$$-12x+12y=-30$$
$$12x-12y=30$$

$$0+0=0$$

$0=0$ Always

Infinite Number of Solutions

17. $(6x-1)(x^2-4x+1)$

$6x^3-24x^2+6x-1x^2+4x-1=$

$6x^3-25x^2+10x-1=$

9.

18. $(3a-7)^2=$

$(3a-7)(3a-7)=$

$9a^2-21a-21a+49=$

$9a^2-42a+49=$

19. $(x+11)(x-11)=$

$x^2-11x+11x-121=$

$x^2-121=$

(20) $\frac{2^{-7}x^{-5}y^{3}}{2^{-4}x^{-8}y^{6}} =$

$\frac{2^{4}x^{8}y^{3}}{2^{7}x^{5}y^{6}} =$

$\frac{x^{8-5}}{2^{7-4}y^{6-3}} =$

$\frac{x^{3}}{2^{3}\cdot y^{3}} =$

$\frac{x^{3}}{2\cdot 2\cdot 2\, y^{3}} =$

$\frac{x^{3}}{8y^{3}} =$

(10.)

(21.) $\frac{x^{2}+9x+6}{x+2}$ OR

synthetic division

$$\begin{array}{r|rrr} -2 & 1 & 9 & 6 \\ & & -2 & -14 \\ \hline & 1 & 7 & -8 \text{ rem} \end{array}$$

$x+7+\frac{-8}{x+2}$

OR

$x+7-\frac{8}{x+2}$

$\frac{x^{2}+9x+6}{x+2}$

$x+7+\frac{-8}{x+2}$

$x+2 \overline{)\, x^{2}+9x+6}$

$-(x^{2}+2x)$

$7x+6$

$-(7x+14)$

$-8$ rem

22. Factor GCF

$20x^4y + 36xy^3 =$

$20x^4y^1 + 36x^1y^3 =$

$4x^1y^1(5x^3 + 9y^2) =$

$4xy(5x^3 + 9y^2)$

23. Factor by grouping

$3xy - 9x + 7y - 21 =$

$(3xy - 9x) + (7y - 21) =$

$3x(y - 3) + 7(y - 3) =$

$(y - 3)(3x + 7) =$

24. Factor

$x^2 - x - 42 =$

42.1
21.2
6.7
14.3

possible

$(x+6)(x-7) =$

12.

25. Factor

$z^2 - 121 =$

$(z)^2 - (11)^2 =$

$(z+11)(z-11)$

formula

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