1. $2.60x + 100 = 2.55x + 600$

2. $2(2x+4) = 2x+20$

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

4. $2(2x+4) = 4x+8$

5. $2(2x+4) = 2x+7$

6. $2(2x+4) = 4x+11$

7. $\frac{x}{5} + 3 = \frac{x}{4} - 2$

8. $A = P + PRT$, $P = 60000$, $R = 12\%$, $T = 5$ YEARS (Loan interest)

9. $A = P - PD$, $P = \$60000$, $D = 95\%$ discount

10. $\frac{7}{8} + \frac{13}{12}$

11. $2x - 10y = 60$ find x

12. $4x - 2y = 80$ fin y

13. $(-54000 - 6000) \div 60 - 100$

14. Find Slope $(-8, -4)$ and $(-6, -3)$

15. Find Equation of line $(10, 9000)$, slope $= m = 200$

16. $4x + 280 \leq 6x + 120$

17. $-8x + 2y = 40$ find slope & y intercept

18. graph $y = -\frac{1}{2}x + 10$

19. graph $3x + 2y = 12$

20. $\frac{100x^{8}y^{-4}}{50x^{-8}y^{-6}}$

21. $\left(\frac{2x^{3}y^{7}}{z^{11}}\right)^{3}$

22. $(4x^2 - x - 7) - (2x^2 - 3x + 10)$

23. $(x+2)(x^2 + 6x - 5)$

24. $(3x+2y)(3x-2y)$

25. $(3x-11)^2$

26. $\frac{5x^2 - 11x - 99}{x-2}$ ← synthetic division

27. $f(x) = x^2 - x - 1$ Find $f(-10)$

28. $m(x) = 2000x + 4000$ Find $m(10)$

29. graph $y = x^2 - 4$

30. Solve
$x + y = 3$
$x - y = 1$

31. Solve
$3x + 5y = 8$
$2x + 2y = 4$

Math 1 04/03/18

03-06-18

1. $2.60x + 100 = 2.55x + 600$

$2.60x + 100 - 100 = 2.55x + 600 - 100$

$2.60x = 2.55x + 500$

$2.60x - 2.55x = 2.55x + 500 - 2.55x$

$.05x = 500$

$\frac{.05x}{.05} = \frac{500}{.05}$

$x = 10{,}000$ ✓

2. $2(2x+4) = 2x + 20$

$4x + 8 = 2x + 20$

$4x + 8 - 8 = 2x + 20 - 8$

$4x = 2x + 12$

$4x - 2x = 2x + 12 - 2x$

$2x = 12$

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

$x = 6$ ✓

2.

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

$4x + 8 = 2x + 8$

$4x + 8 - 8 = 2x + 8 - 8$

$4x = 2x$

$4x - 2x = 2x - 2x$

$2x = 0$

$\frac{2x}{2} = \frac{0}{2}$

$x = 0$ ✓

3.

4. $2(2x+4) = 4x+8$

$4x + 8 = 4x + 8$

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

$4x = 4x$

$4x - 4x = 4x - 4x$

$0 = 0$

all real numbers ✓

(5) $2(2x+4) = 2x+7$

$4x+8 = 2x+7$

$4x+8-8 = 2x+7-8$

$4x = 2x-1$

$4x-2x = 2x-1-2x$

$2x = -1$

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

$x = -1/2$

(6.) $2(2x+4) = 4x+11$

$4x+8 = 4x+11$

$4x+8-8 = 4x+11-8$

$4x = 4x+3$

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

$0 \neq 3$

NO Solution

7. $\frac{x}{5} + 3 = \frac{x}{4} - 2$

mult by LCD = 20

$\frac{x}{5} + \frac{3}{1} = \frac{x}{4} - \frac{2}{1}$

$\frac{x}{5}(20) + \frac{3}{1}(20) = \frac{x}{4}(20) - \frac{2}{1}(20)$

$x(4) + 3(20) = x(5) - 2(20)$

$4x + 60 = 5x - 40$

$4x + 60 - 60 = 5x - 40 - 60$

$4x = 5x - 100$

$4x - 5x = 5x - 100 - 5x$

$-1x = -100$

$\frac{-1x}{-1} = \frac{-100}{-1}$

$x = 100$ ✓

8. $A = P + PRT$ $P = ₦60000$, $R = 12\% = .12$

$T = 5$ YEARS

$A = 60000 + 60000(.12)(5)$

$A = 60000 + 60000(.60)$

$A = 60000 + 36000$

$A = ₦96,000$ ✓

Loan

~~Plus~~ Interest

9. $A = P - PD$ $P = ₦60000$, $D = 95\% = .95$

$A = 60000 - 60000(.95)$

$A = 60000 - ₦57,000$

$A = ₦3,000$

discount ✓

10. $\frac{7}{8}+\frac{13}{12}=$ Primes 2, 3, 5, 7, ...

$\frac{7}{8}\left(\frac{3}{3}\right)+\frac{13}{12}\left(\frac{2}{2}\right)=$

$\frac{21}{24}+\frac{26}{24}=$

$\frac{21+26}{24}=$

$\frac{47}{24}=$ ✓

2 | 8
2 | 4
2 | 2
1

2 | 12
2 | 6
3 | 3
1

$8 = 2 \cdot 2 \cdot 2$

$12 = 2 \cdot 2 \cdot 3$

$LCD = 2 \cdot 2 \cdot 2 \cdot 3$

$= 24$

11. $2x-10y=60$ Solve for x

$2x-10y+10y=60+10y$

$2x=60+10y$

$\frac{2x}{2}=\frac{60}{2}+\frac{10y}{2}$

$x=30+5y$

OR ✓

$x=5y+30$

12. $4x - 2y = 80$ Solve for y

$4x - 2y - 4x = 80 - 4x$

$-2y = 80 - 4x$

$\frac{-2y}{-2} = \frac{80}{-2} - \frac{4x}{-2}$

$y = -40 + 2x$ ✓

$y = 2x - 40$

13. $(-54000 - 6000) \div 60 - 100 =$

$(-60000) \div 60 - 100 =$

$-1000 - 100 =$

$-1100 =$

Example: Car payment plus insurance

14. Find slope $(-8, -4)$ and $(-6, -3)$

$x_1 \; y_1 \qquad x_2 \; y_2$

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

$m = \frac{(-4) - (-3)}{(-8) - (-6)}$

$m = \frac{-4 + 3}{-8 + 6}$

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

$\rightarrow m = \frac{-1(1)}{-1(2)}$

$m = \frac{1}{2}$ ✓

15. Find the equation of the line with slope $= m = \$200$ at point $(10, \$9000)$

$x_1 \quad y_1$

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

$y - (9000) = 200(x - (10))$

$y - 9000 = 200(x - 10)$

$y - 9000 = 200x - 2000$

$y - 9000 + 9000 = 200x - 2000 + 9000$

$y = \$200x + \$7000$ ← Lawyers Fees Example

16. $4x + 280 \leq 6x + 120$

$4x + 280 - 280 \leq 6x + 120 - 280$

$4x \leq 6x - 160$

$4x - 6x \leq 6x - 160 - 6x$

$-2x \leq -160$

$\frac{-2x}{-2} \geq \frac{-160}{-2}$

$x \geq 80$ ✓

17. Find the slope and y-intercept

$-8x + 2y = 40$

$-8x + 2y + 8x = 40 + 8x$

$2y = 40 + 8x$

$\frac{2y}{2} = \frac{40}{2} + \frac{8x}{2}$

$y = 20 + 4x$

$y = 4x + 20$ ✓

Slope = $m = 4$

y-intercept = $(0, 20)$

18. graph

$y = -\frac{1}{2}x + 10$

$y = -\frac{1}{2}(0) + 10$

$y = 0 + 10$

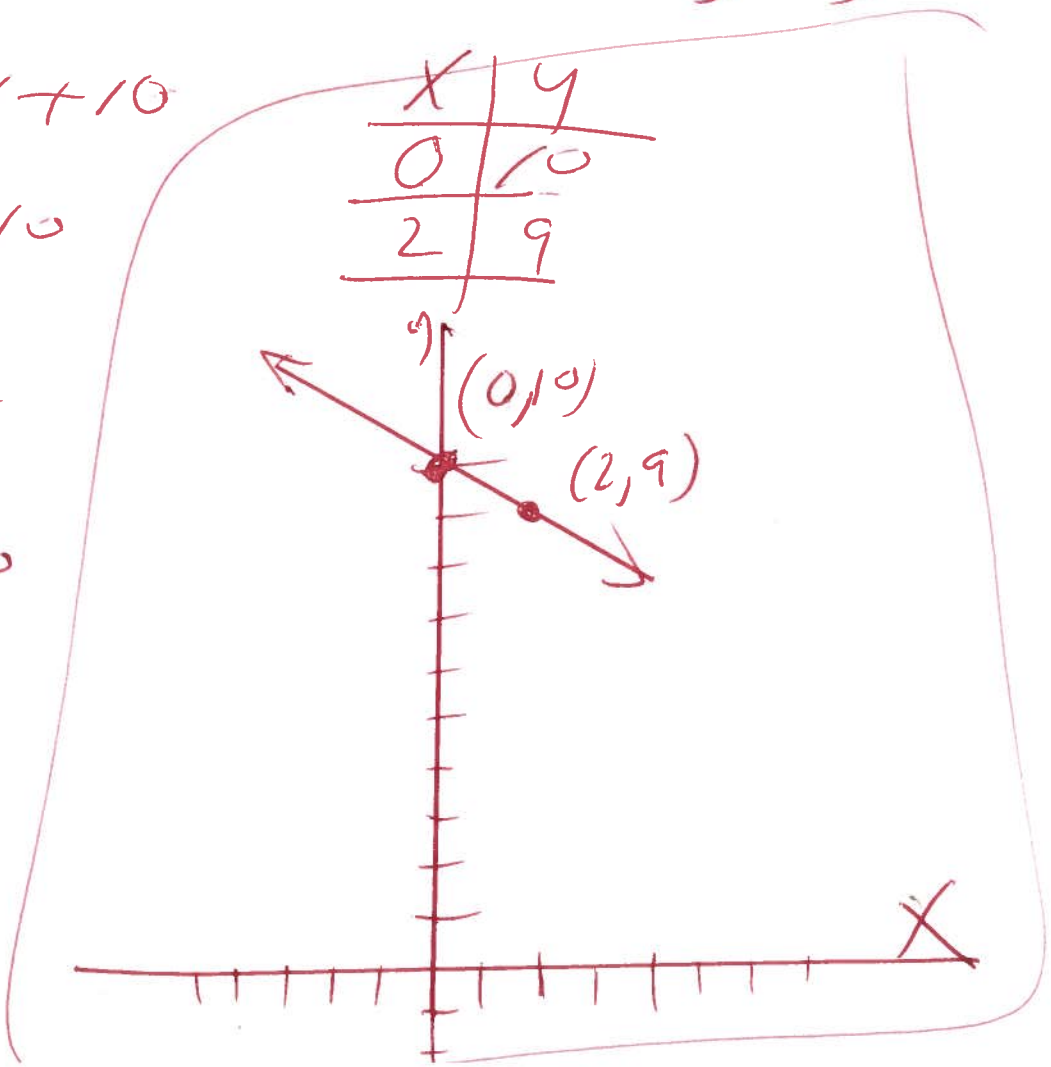
$y = 10$

$y = -\frac{1}{2}(2) + 10$

$y = -1 + 10$

$y = 9$

x	y
0	10
2	9



19. graph

$3x+2y=12$

$3x+2y-3x=12-3x$

$2y=12-3x$

$\frac{2y}{2}=\frac{12}{2}-\frac{3x}{2}$

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

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

x	y
0	6
2	3

11.

$y=-\frac{3}{2}(0)+6$

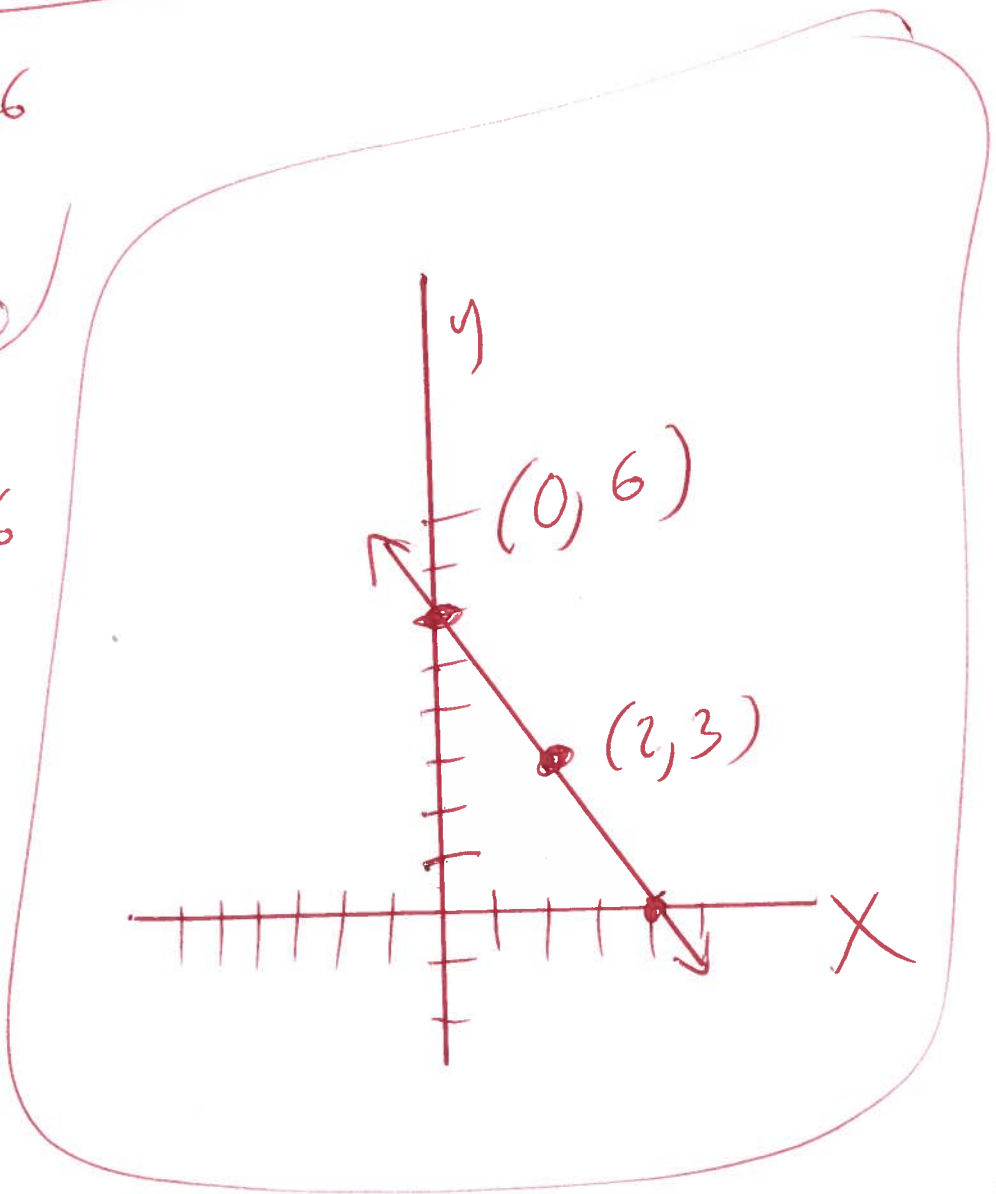
$y=0+6$

$y=6$

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

$y=-3+6$

$y=3$



20. $\frac{100x^8y^{-4}}{50x^{-8}y^6} =$

12

$\frac{100\,x^8x^8y^6}{50\quad y^4} =$ rewrite

$\frac{2(50)\,x^{8+8}\,y^{6-4}}{50} =$

$2x^{16}y^2 =$

21. $\left(\frac{2x^3y^7}{z^{11}}\right)^3 =$

$\left(\frac{2^1x^3y^7}{z^{11}}\right)^3 =$

$\frac{2^{1(3)}\,x^{3(3)}\,y^{7(3)}}{z^{11(3)}} =$

$\frac{2^3x^9y^{21}}{z^{33}} =$

$\frac{2\cdot2\cdot2\,x^9y^{21}}{z^{33}} =$

$\frac{8x^9y^{21}}{z^{33}} =$

13

22. $(4x^2-x-7)-(2x^2-3x-10)=$

$4x^2-x-7-2x^2+3x+10=$

$4x^2-1x-7-2x^2+3x+10=$

$2x^2+2x+3=$ ✓

23. $(x+2)(x^2+6x-5)=$

$x^3+6x^2-5x+2x^2+12x-10=$

$x^3+8x^2+7x-10=$ ✓

24. $(3x+2y)(3x-2y)=$ formula $a^2-b^2=(a+b)(a-b)$

$9x^2-6xy+6xy-4y^2=$

$9x^2-4y^2=$ ✓

25. $(3x-11)^2=$

$(3x-11)(3x-11)=$

$9x^2-33x-33x+121=$ ✓

$9x^2-66x+121=$

(26) $\dfrac{5x^2-11x-99}{x-2}$

(14)

$5x-1+\dfrac{-101}{x-2}$

$x-2 \;\overline{)\;5x^2-11x-99}$

$-(5x^2 \pm 10x)$

$-1x-99$

$-(\pm 1x \mp 2)$

-101 rem

long division

OR use Synthetic division

$\dfrac{5x^2-11x-99}{x-2}$

opp

$2 \;\big|\; 5 \quad -11 \quad -99$

$\qquad\quad 10 \quad -2$

$5 \quad -1 \quad -101$ rem

$5x-1+\dfrac{-101}{x-2}$ OR $5x-1-\dfrac{101}{x-2}$

27. $f(x) = x^2 - x - 1$ find $f(-10)$

(5)

$f(-10) = (-10)^2 - (-10) - 1$

$f(-10) = (-10)(-10) - (-10) - 1$

$f(-10) = 100 + 10 - 1$

$f(-10) = 110 - 1$

$f(-10) = 109$ ✓

28. $m(x) = 2000x + 4000$ find $m(10)$

$m(10) = 2000(10) + 4000$

$m(10) = \$20{,}000 + \$4{,}000$

$m(10) = \$24{,}000$

Example: Tuition at Private University for 10 hours

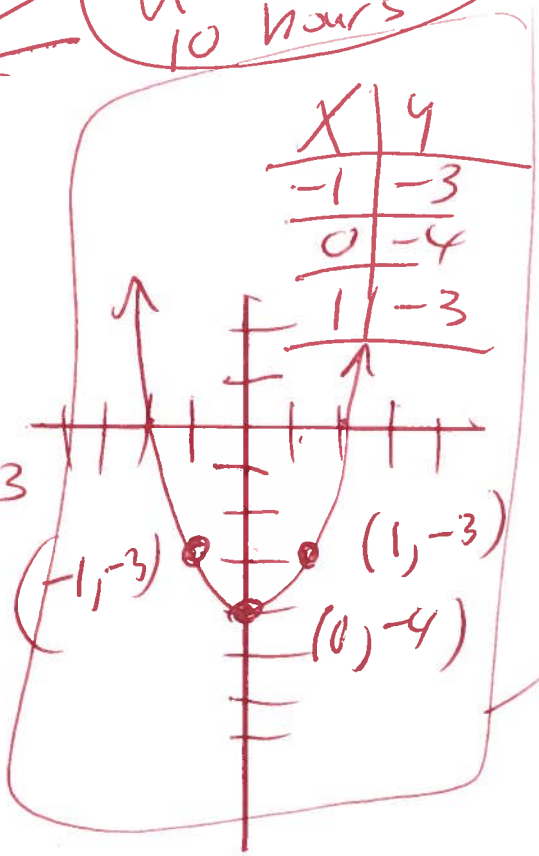
29. Graph $y = x^2 - 4$

$y = (-1)^2 - 4 = (-1)(-1) - 4 = 1 - 4 = -3$

$y = (0)^2 - 4 = (0)(0) - 4 = 0 - 4 = -4$

$y = (1)^2 - 4 = (1)(1) - 4 = 1 - 4 = -3$

x	y
-1	-3
0	-4
1	-3



30. Solve

$x+y=3$

$x-y=1$

$2x = 4$

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

$x=2$

Subst

$x+y=3$

$(2)+y=3$

$2+y=3$

$2+y-2=3-2$

$y=1$

$(x, y)=(2, 1)$ ✓

16.

31. Solve

$3x+5y=8$

$2x+2y=4$

$(3x+5y=8)(-2)$

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

$-6x-10y=-16$

$10x+10y=20$

$4x=4$

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

$x=1$

Subst

$3x+5y=8$

$3(1)+5y=8$

$3+5y=8$

$3+5y-3=8-3$

$5y=5$

$\frac{5y}{5} = \frac{5}{5}$

$y=1$

$(x, y)=(1, 1)$ ✓