M0410 Brak 33φ Ship
03-07-19

① $(-17-43) \div 15 - 26 =$

$(-60) \div 15 - 26 =$

$-4 - 26 =$

$-30 =$

② $5(y-3) = 2y - 15$

$5y - 15 = 2y - 15$

$5y - \cancel{15} + \cancel{15} = 2y - \cancel{15} + \cancel{15}$

$5y = 2y$

$5y - 2y = 2y - 2y$

$3y = 0$

$\frac{\cancel{3}y}{\cancel{3}} = \frac{0}{3}$

$y = 0$

3. $7(6x-3) = 43x$

$42x - 21 = 43x$

$42x - 21 + 21 = 43x + 21$

$42x = 43x + 21$

$42x - 43x = 43x + 21 - 43x$

$-1x = 21$

$\frac{-1x}{-1} = \frac{21}{-1}$

$x = -21$

4. $\frac{1}{8} - \frac{5}{12} =$

$\frac{1}{8}\left(\frac{3}{3}\right) - \frac{5}{12}\left(\frac{2}{2}\right) =$

$\frac{3}{24} - \frac{10}{24} =$

$\frac{3-10}{24} =$

$\frac{-7}{24} =$

Primes 2, 3, 5, 7, 11, 13, ...

8	12
2 | 8	2 | 12
2 | 4	2 | 6
2 | 2	3 | 3
1	1

$8 = 2 \cdot 2 \cdot 2$

$12 = 2 \cdot 2 \cdot 3$

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

$= 24$

(5) $\frac{m}{3} + 5 = \frac{8}{3}$ LCD = 3

$\frac{m}{3} + \frac{5}{1} = \frac{8}{3}$

$\frac{m}{3}(3) + \frac{5}{1}(3) = \frac{8}{3}(3)$

$m(1) + 5(3) = 8(1)$

$1m + 15 = 8$

$m + 15 - 15 = 8 - 15$

$m = -7$

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(6) $1.8x - 23 = 1.3x + 8$

$1.8x - 23 + 23 = 1.3x + 8 + 23$

$1.8x = 1.3x + 31$

$1.8x - 1.3x = 1.3x + 31 - 1.3x$

$.5x = 31$

$\frac{.5x}{.5} = \frac{31}{.5}$

$x = 62$

(7.) a store normally priced at $469 is on sale for 30% off. Find the discount and the sale price.

$A = P - PD$ $P = \$469$, $D = 30\%$

$A = \$469 - \$469(30\%)$

$A = \$469 - \$469(.30)$

$A = \$469 - \$140.70$ ← discount

$A = \$328.30$ ← Sale price

(8.v) A company borrows $96000 for 3 years at a simple interest rate of 13.5%. Find the interest paid on the loan and the total amount paid.

$A = P + PRT$ $P = 96000$, $R = 13.5\%$, $T = 3$

$A = \$96000 + 96000(13.5\%)(3)$

$A = \$96000 + \$96000(.135)(3)$

$A = \$96000 + \$96000(.405)$

$A = \$96000 + \$38880$ interest paid on loan

$A = \$134,880$ total amount paid

(9) $4(3x-2) = 12x-8$

$12x - 8 = 12x - 8$

$12x - 8 + 8 = 12x - 8 + 8$

$12x = 12x$

$12x - 12x = 12x - 12x$

$0 = 0$

The solution is all real numbers

(10) $\frac{x}{4} + 4 = \frac{x}{4}$ LCD = 4

$\frac{x}{4} + \frac{4}{1} = \frac{x}{4}$

$\frac{x}{4}(4) + \frac{4}{1}(4) = \frac{x}{4}(4)$

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

$1x + 16 = 1x$

$1x + 16 - 16 = 1x - 16$

$1x = 1x - 16$

$1x - 1x = 1x - 16 - 1x$

$0 \neq -16$

There is no solution

(11) Solve for y

$2x + y = 8$

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

$y = 8 - 2x$

OR

$y = -2x + 8$

form

$y = mx + b$

(12) $-4x + 2 \geq 2(4 - x)$

$-4x + 2 \geq 8 - 2x$

$-4x + 2 - 2 \geq 8 - 2x - 2$

$-4x \geq -2x + 6$

$-4x + 2x \geq -2x + 6 + 2x$

$-2x \geq 6$

$\frac{-2x}{-2} \leq \frac{6}{-2}$

divide by a negative and turn alligator around

$x \leq -3$

$(-\infty, -3]$

(13.) $y = 8x$ graph

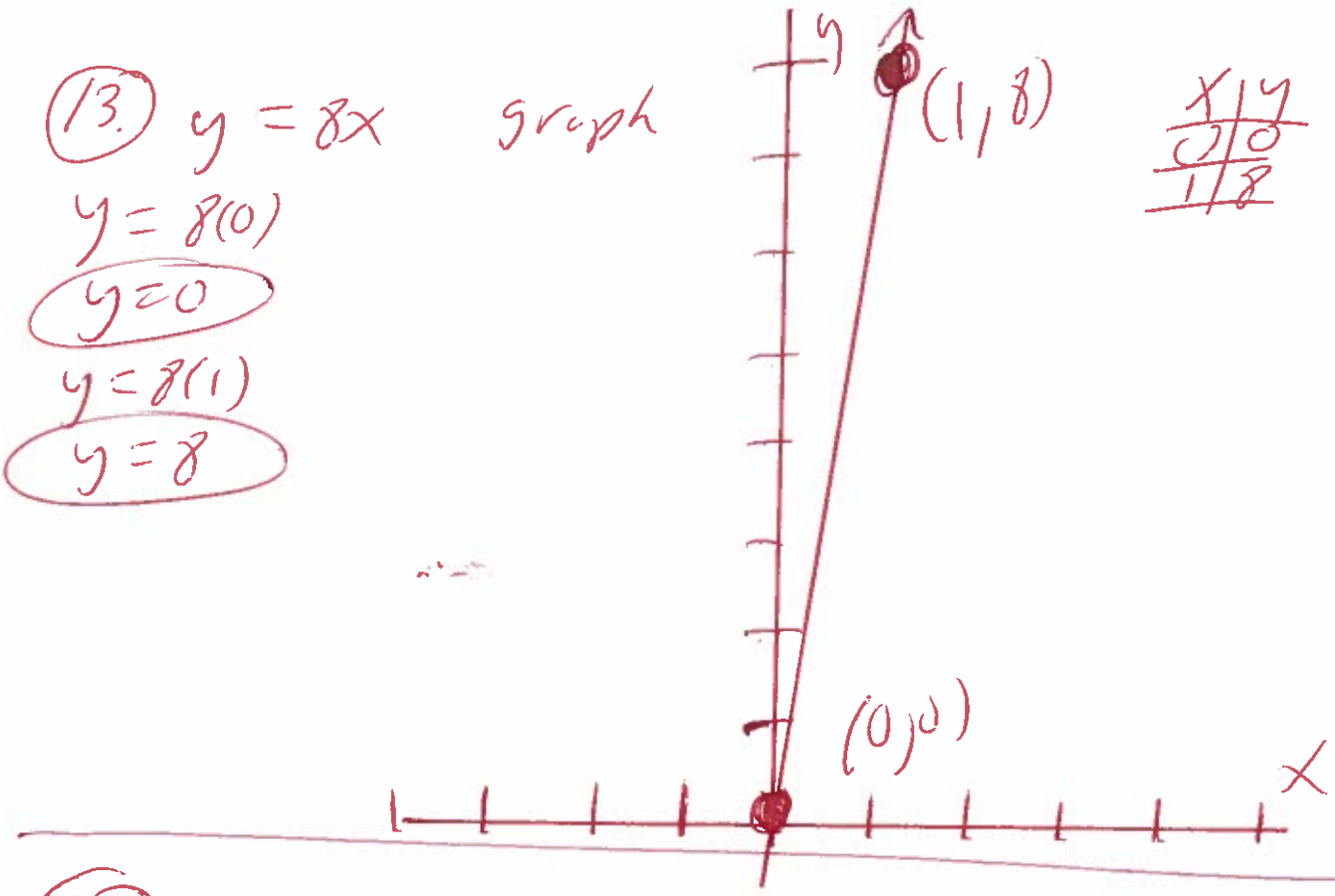
$y = 8(0)$

$y = 0$

$y = 8(1)$

$y = 8$

x	y
0	0
1	8



(14.) $y = -2x + 4$ graph

$y = -2(0) + 4$

$y = 0 + 4$

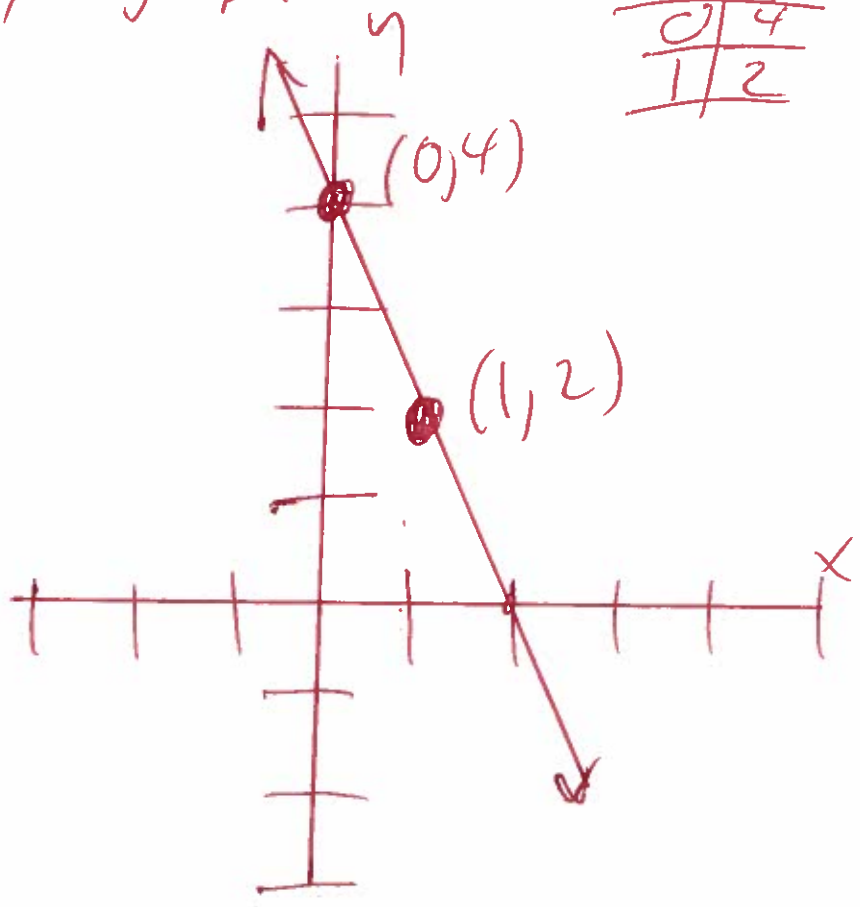
$y = 4$

$y = -2(1) + 4$

$y = -2 + 4$

$y = 2$

x	y
0	4
1	2



15. $2x - 3y = 6$ graph find intercepts

find x-intercept let $y = 0$

$2x - 3(0) = 6$

$2x - 0 = 6$

$2x = 6$

$\frac{2x}{2} = \frac{6}{2}$

$x = 3$ x-intercept $(3, 0)$

find y-intercept let $x = 0$

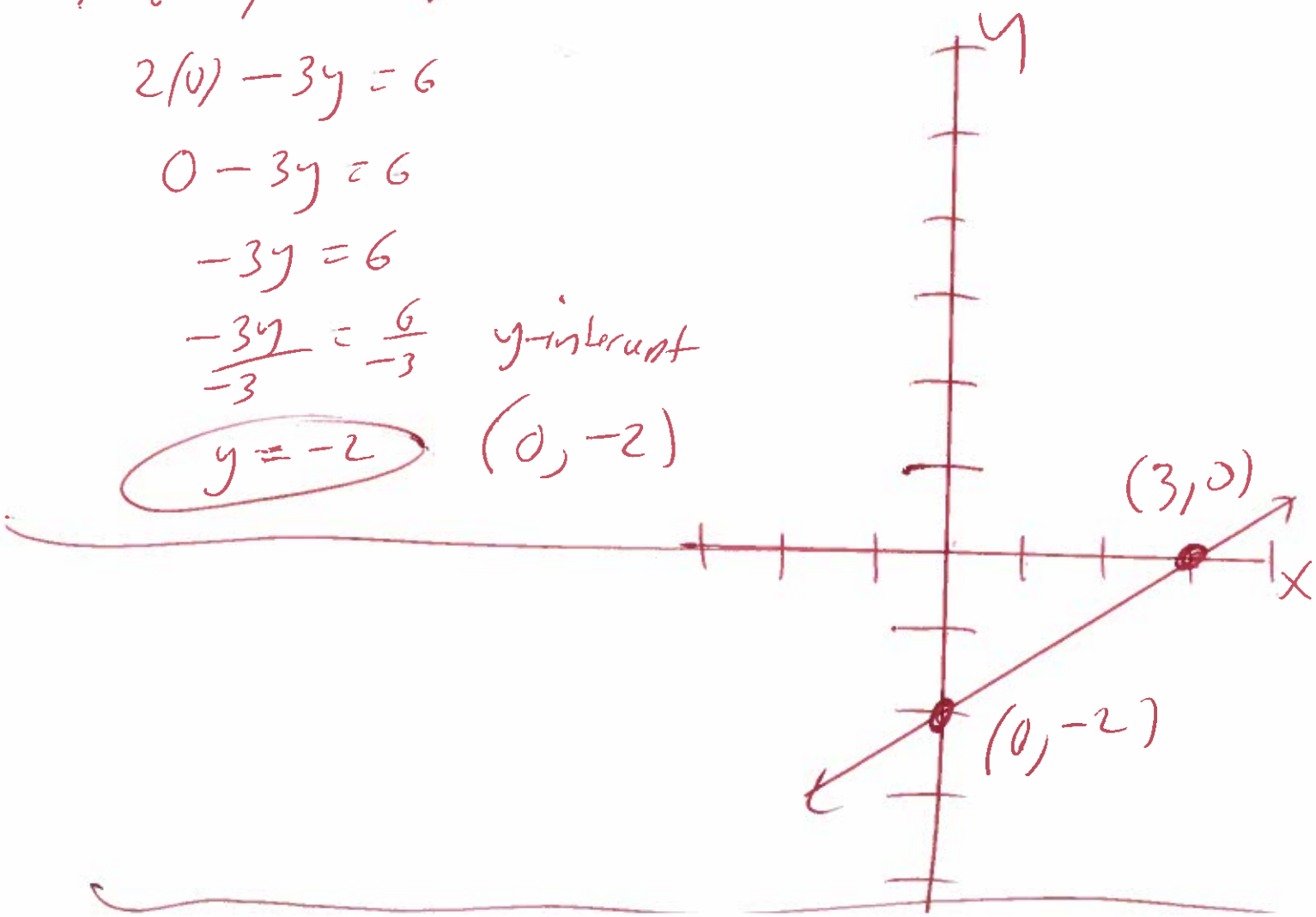
$2(0) - 3y = 6$

$0 - 3y = 6$

$-3y = 6$

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

$y = -2$ y-intercept $(0, -2)$



OR another way

15. $2x - 3y = 6$

Solve for y

$y = mx + b$

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

$-3y = 6 - 2x$

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

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

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

form

$y = mx + b$

x	y
0	-2
3	0

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

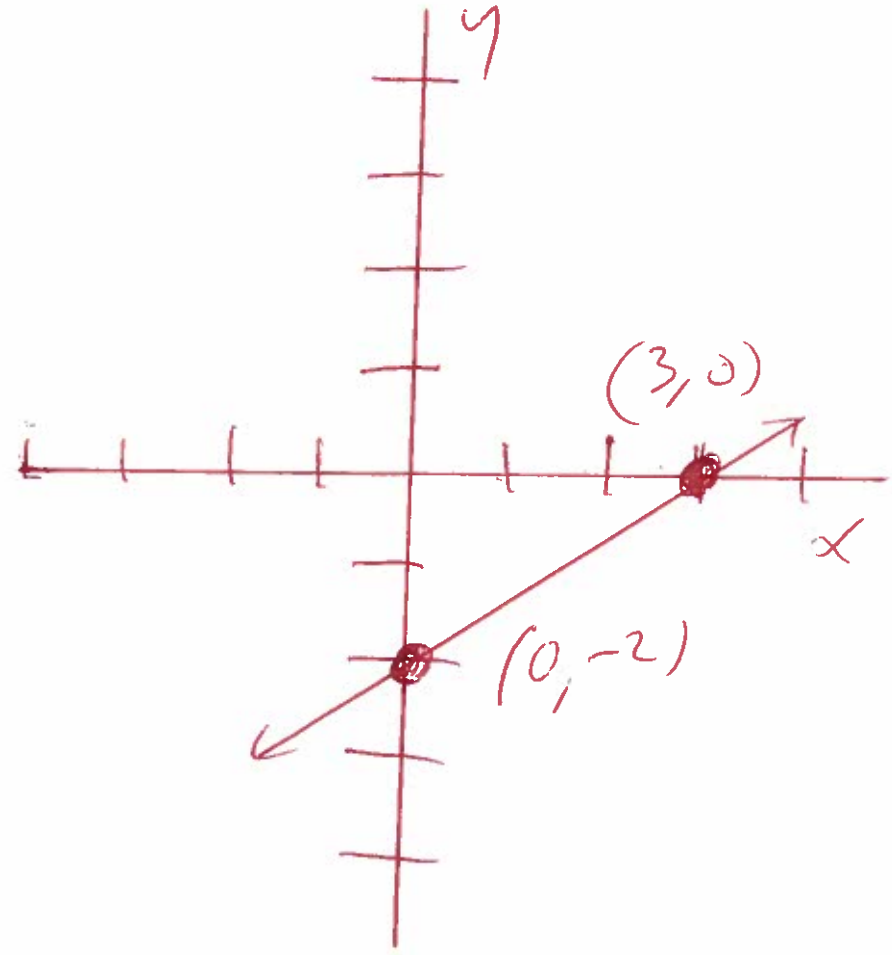
$y = 0 - 2$

$y = -2$

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

$y = 2 - 2$

$y = 0$



(16) Find the slope of the line that goes through the points $(2,-1)$ and $(8,10)$

$x_1\ y_1 \qquad x_2\ y_2$

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

$$m = \frac{(-1)-(10)}{(2)-(8)}$$

$$m = \frac{-1-10}{2-8}$$

$$m = \frac{-11}{-6}$$

$$m = \frac{11}{6}$$

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(17) Find the slope of the line

$$2x + y = 4$$

$$2x + y - 2x = 4 - 2x$$

$$y = 4 - 2x$$

$y = -2x + 4$ ↑ $y = mx + b$

Slope $= m = -2$

Slope $= m$; y-intercept $= b$

(18.) Find the slope of the line

$8x - 5y = 40$

$8x - 5y - 8x = 40 - 8x$

$-5y = 40 - 8x$

$\frac{-5y}{-5} = \frac{40}{-5} - \frac{8x}{-5}$

$y = -8 + \frac{8}{5}x$

form

$y = mx + b$

slope $= m$ y-intercept $= b$

$y = \frac{8}{5}x - 8$

Slope $= m = \frac{8}{5}$

(19.) determine whether the pair of lines are parallel, perpendicular, or neither.

$y = \frac{7}{6}x + 5 \qquad m_1 = \frac{7}{6}$

$y = -\frac{7}{6}x \qquad m_2 = \frac{-7}{6}$

Since $m_1 \neq m_2$ not parallel

Since $m_1 \cdot m_2 = \left(\frac{7}{6}\right)\left(\frac{-7}{6}\right) = \frac{-49}{36} \neq -1$

not perpendicular

Neither

(20) Find the slope-intercept form of the line whose slope is 5 and that passes through the point $(-5, 7)$

$m = 5 = \text{slope}$ point $= (-5, 7)$, x_1 y_1

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

$$y - (7) = 5(x - (-5))$$

$$y - 7 = 5(x + 5)$$

$$y - 7 = 5x + 25$$

$$y - 7 + 7 = 5x + 25 + 7$$

$$y = 5x + 32$$

(21) Determine whether each ordered pair is a solution

$2x - y = 4$

$x + 9y = 21$

(3, 2)

x y

$2(3) - (2) = 4$ Subst

$6 - 2 = 4$

$4 = 4$ YES

YES

(3, 2) is a solution

$(3) + 9(2) = 21$ Subst

$3 + 18 = 21$

$21 = 21$ YES

$2x - y = 4$

$x + 9y = 21$

(5, 6)

x y

$2(5) - (6) = 4$ Subst

$10 - 6 = 4$

$4 = 4$ YES

NO (5, 6) is not a solution

$(5) + 9(6) = 21$

$5 + 54 = 21$

$59 \neq 21$

NO

(22) $6x+y=20$ Solve

$4x-y=10$

$10x+0=30$

$10x=30$

$\frac{10x}{10}=\frac{30}{10}$

$x=3$

Subst

$6x+y=20$

$6(3)+y=20$

$18+y=20$

$18+y-18=20-18$

$y=2$

$(x,y)=(3,2)$

(23)

$x+4y=-2$

$2x+5y=-7$

$\begin{matrix} x+4y=-2 \\ 2x+5y=-7 \end{matrix}\begin{pmatrix} -5 \\ 4 \end{pmatrix}$ Mult

$-5x-20y=10$

$8x+20y=-28$

$3x+0=-18$

$3x=-18$

$\frac{3x}{3}=\frac{-18}{3}$

$x=-6$

Subst

$x+4y=-2$

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

$-6+4y=-2$

$-6+4y+6=-2+6$

$4y=4$

$\frac{4y}{4}=\frac{4}{4}$

$y=1$

$(x,y)=(-6,1)$

(24) $P(x) = x^2 + x + 3$ Find $P(8)$

$P(8) = (8)^2 + (8) + 3$

$P(8) = (8)(8) + (8) + 3$

$P(8) = 64 + 8 + 3$

$P(8) = 72 + 3$

$P(8) = 75$

(25) $(5y^2 + 4y - 3) - (-2y + 2) =$

$5y^2 + 4y - 3 + 2y - 2 =$

$5y^2 + 6y - 5 =$

(26) $(-6y^2-6y)+(4y^2+2y-7)=$

$-6y^2-6y+4y^2+2y-7=$

$-2y^2-4y-7=$

(27) $(2y-4)^2=$

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

$4y^2-8y-8y+16=$

$4y^2-16y+16=$

28) $(5x-5)(4x+5) =$

$20x^2 + 25x - 20x - 25 =$

$20x^2 + 5x - 25 =$

29) $(x+3)(x^3 - 5x + 7) =$

$x^4 - 5x^2 + 7x + 3x^3 - 15x + 21 =$

$x^4 + 3x^3 - 5x^2 - 8x + 21 =$

(30) $(5a+7)(9a^2-4a-4) =$

$45a^3 - 20a^2 - 20a + 63a^2 - 28a - 28 =$

$45a^3 + 43a^2 - 48a - 28 =$

(31) $(2c+d)(2c-d) =$

$4c^2 - 2cd + 2cd - d^2 =$

$4c^2 - d^2 =$

(3c) $\left(\frac{x^{-3}y^{3}}{x^{3}y^{10}}\right)^{2} =$

$\frac{x^{-3(2)}y^{3(2)}}{x^{3(2)}y^{10(2)}} =$ mult powers

$\frac{x^{-6}y^{6}}{x^{6}y^{20}} =$

$\frac{y^{6}}{x^{6}y^{20}x^{6}} =$ rewrite

$\frac{y^{6}}{x^{6+6}y^{20}} =$

$\frac{y^{6}}{x^{12}y^{20}} =$

$\frac{1}{x^{12}y^{20-6}} =$

$\frac{1}{x^{12}y^{14}} =$

(35) $(6x^2+11x+11) \div (x+1) =$

$$\frac{6x^2+11x+11}{x+1} =$$

divide using synthetic division

~~ORP~~

$$\begin{array}{r|rrr} -1 & 6 & 11 & 11 \\ & & -6 & -5 \\ \hline & 6 & 5 & 6 \end{array}$$

6 5 6 rem

$$6x+5+\frac{6}{x+1}$$