1. $(-14-22) \div 18-28 =$

$(-36) \div 18-28 =$

$-2-28=$

$-30=$

PEMDAS

M0410 Fiesta 35Q Step
03-23-19
03-25-19

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2. $5(y-2)=2y-10$

$5y-10=2y-10$

$5y-10+10=2y-10+10$

$5y=2y$

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

$3y=0$

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

$y=0$

(3) $4(5x-3) = 21x$

$20x - 12 = 21x$

$20x - 12x + 12 = 21x + 12$

$20x = 21x + 12$

$20x - 21x = 21x + 12 - 21x$

$-1x = 12$

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

$x = -12$

---

(4) $\frac{1}{4} - \frac{7}{10} =$

$\frac{1}{4}\left(\frac{5}{5}\right) - \frac{7}{10}\left(\frac{2}{2}\right) =$

$\frac{5}{20} - \frac{14}{20} =$

$\frac{5-14}{20} =$

$\frac{-9}{20} =$

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

$2 \mid 4 \quad 2 \mid 10$

$2 \mid 2 \quad 5 \mid 5$

$1 \quad 1$

$4 = 2 \cdot 2$

$10 = 2 \cdot 5$

$LCD = 2 \cdot 2 \cdot 5$

$= 20$

(5) $\frac{z}{3} + 4 = \frac{7}{3}$

$\frac{z}{3} + \frac{4}{1} = \frac{7}{3}$

$\frac{z}{3}(3) + \frac{4}{1}(3) = \frac{7}{3}(3)$ Mult by (CD = 3)

$z(1) + 4(3) = 7(1)$

$12 + 12 = 7$

$z + 12 = 7$

$z + x - x = 7 - 12$

$z = -5$

---

(6) $3.2x - 55 = 1.4x + 8$

$3.2x - 55 + 55 = 1.4x + 8 + 55$

$3.2x = 1.4x + 63$

$3.2x - 1.4x = 1.4x + 63 - 1.4x$

$1.8x = 63$

$\frac{1.8x}{1.8} = \frac{63}{1.8}$

$x = 35$

(7.) A stereo normally priced at $749 is on sale for 25% off. Find the discount and sale price.

$A = P - PD$

$P = 749$

$D = 25\% = .25$

$A = \$749 - \$749(.25)$

$A = \$749 - \$187.25$ discount

$A = \$561.75$ sale price

(8.) A company borrows $5300 for 5 years at a simple interest rate of 14.5%. Find the interest paid on the loan and the total amount paid.

$A = P + PRT$

$P = \$5300$

$R = 14.5\% = .145$

$T = 5$

$A = \$5300 + \$5300(.145)(5)$

$A = \$5300 + \$5300(.725)$

$A = \$5300 + \$38,425$ interest paid

$A = \$91,425$ total amount paid

(9) $6(5x-2) = 30x-12$

$30x - 12 = 30x - 12$

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

$30x = 30x$

$30x - 30x = 30x - 30x$

$0 = 0$

The solution is all real numbers

(10) $\frac{x}{3} + 3 = \frac{x}{3}$ LCD = 3

$\frac{x}{3} + \frac{3}{1} = \frac{x}{3}$

$\frac{x}{3}(3) + \frac{3}{1}(3) = \frac{x}{3}(3)$

$x(1) + 3(3) = x(1)$

$1x + 9 = 1x$

$1x + 9 - 9 = 1x - 9$

$1x = 1x - 9$

$1x - 1x = 1x - 9 - 1x$

$0 \neq -9$

There is no solution

(11) Solve for y

$7x + y = 10$

$7x + y - 7x = 10 - 7x$

$y = 10 - 7x$

OR

$y = -7x + 10$

---

(12) $-6x + 4 \geq 4(3 - x)$

$-6x + 4 \geq 12 - 4x$

$-6x + 4 - 4 \geq 12 - 4x - 4$

$-6x \geq -4x + 8$

$-6x + 4x \geq -4x + 8 + 4x$

$-2x \geq 8$

$\frac{-2x}{-2} \leq \frac{8}{-2}$

divide by a negative turn alligator around

$x \leq -4$

$(-\infty, -4]$

13. $y = 8x$

$y = 8(-1)$

$y = -8$

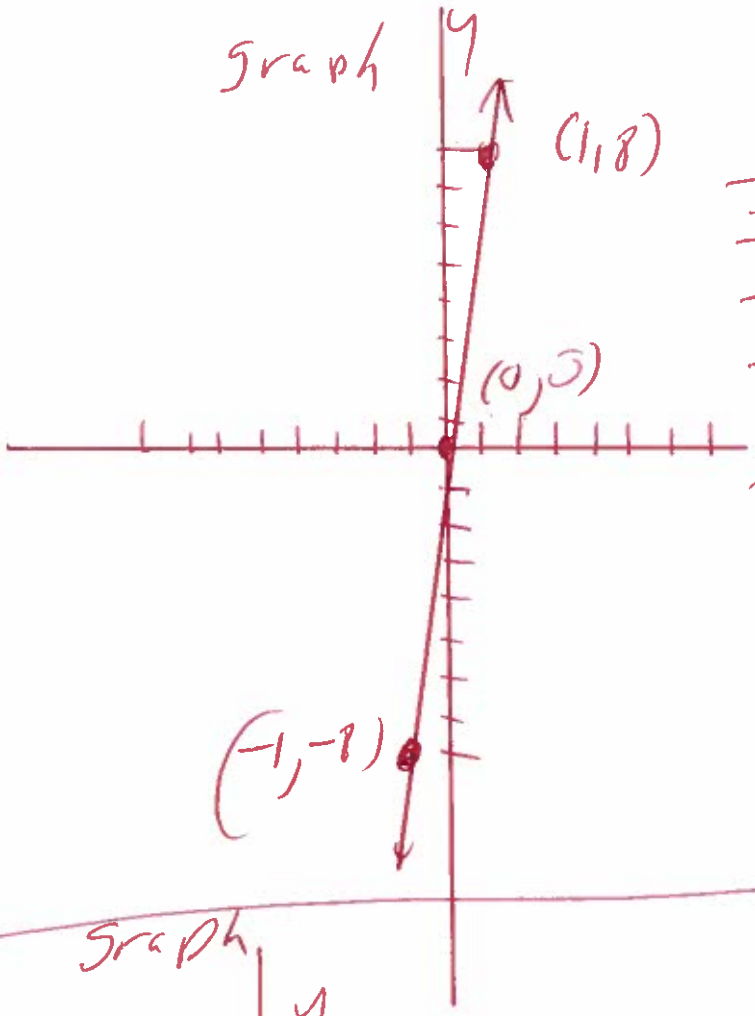
$y = 8(0)$

$y = 0$

$y = 8(1)$

$y = 8$

Graph



x	y
-1	-8
0	0
1	8

14. $y = -4x + 5$

$y = -4(0) + 5$

$y = 0 + 5$

$y = 5$

$y = -4(1) + 5$

$y = -4 + 5$

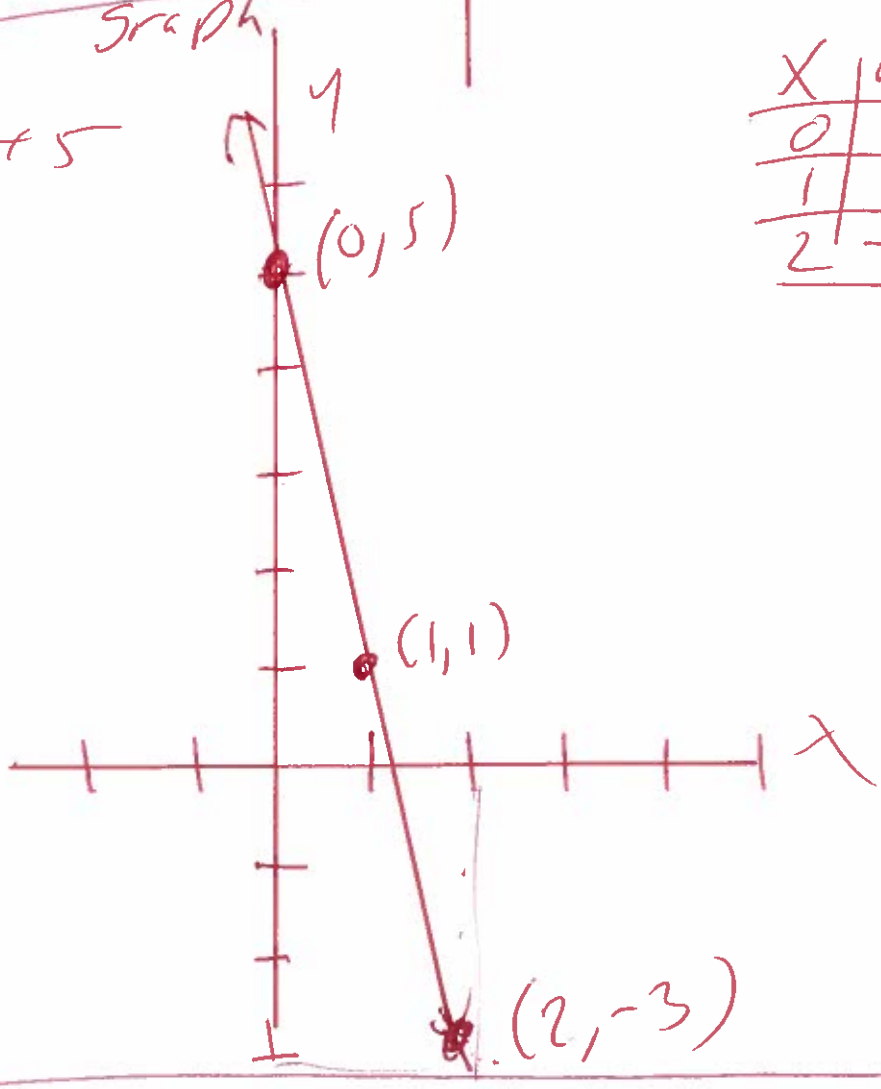
$y = 1$

$y = -4(2) + 5$

$y = -8 + 5$

$y = -3$

Graph



x	y
0	5
1	1
2	-3

(1st way)

15. $3x - 6y = -6$ Plot the intercepts to graph

Find x-intercept Let $y = 0$

$3x - 6(0) = -6$

$3x - 0 = -6$

$3x = -6$

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

$x = -2$

x-intercept

$(-2, 0)$

Find
x intercept
y-intercept

Find y-intercept Let $x = 0$

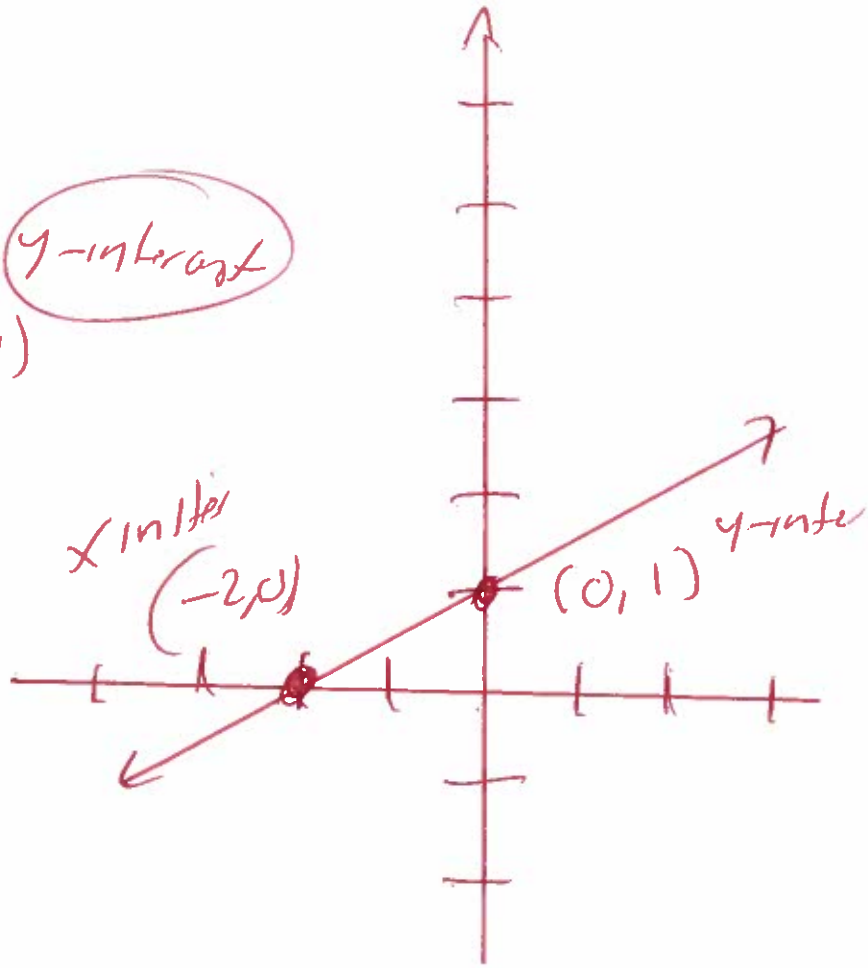
$3(0) - 6y = -6$

$0 - 6y = -6$

$-6y = -6$

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

$y = 1$ $(0, 1)$ y-intercept



OR 2ND Method Graph

15. $3x - 6y = -6$

$-3x \quad -3x$

$-6y = -6 - 3x$

Solve for y

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

$y = 1 + \frac{3}{6}x$

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

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

$y = \frac{1}{2}x + 1$ $\quad y = mx + b$ form

x	y
0	1
2	2

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

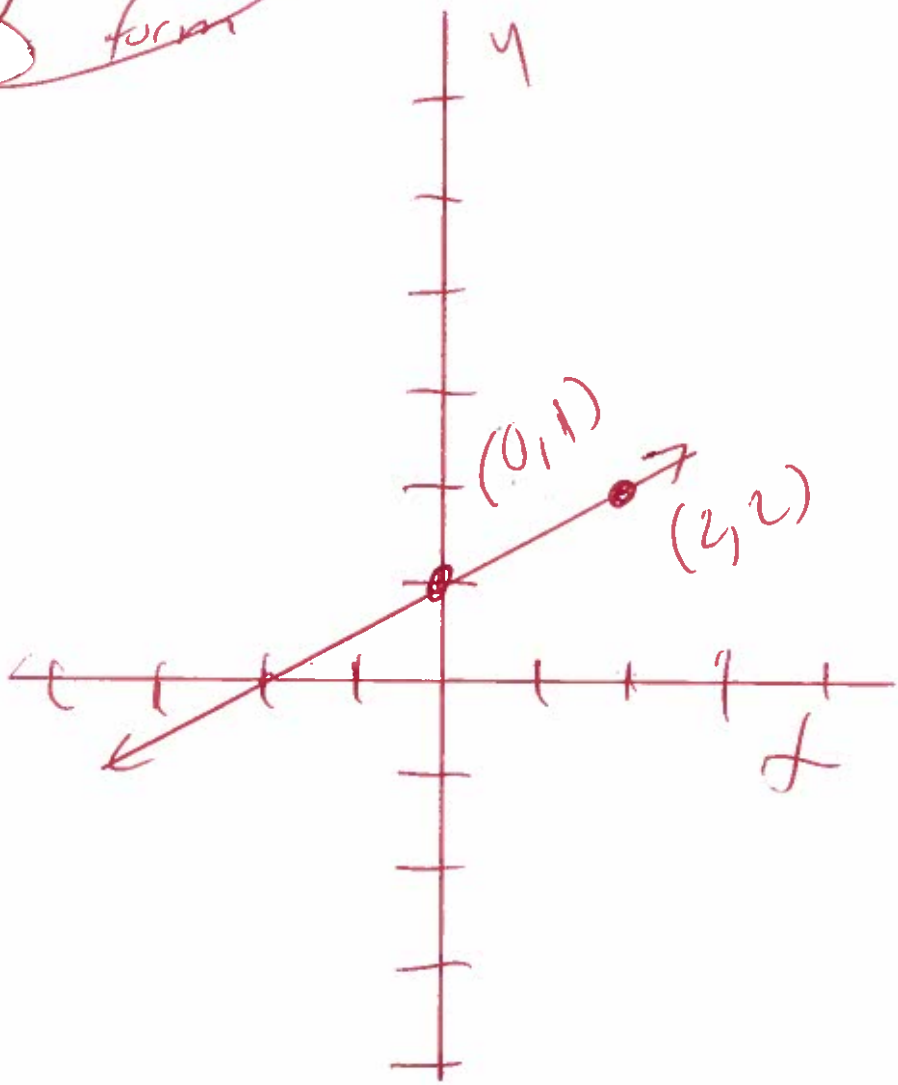
$y = 0 + 1$

$y = 1$

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

$y = 1 + 1$

$y = 2$



(16) find slope

$(-1, -6)$ and $(2, -7)$

$x_1 \quad y_1 \qquad x_2 \quad y_2$

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

$$m = \frac{(-6) - (-7)}{(-1) - (2)}$$

$$m = \frac{-6+7}{-1-2}$$

$$m = \frac{1}{-3}$$

---

(17) Find the slope of the line

$9x + y = 2$

$9x + y - 9x = 2 - 9x$

$y = 2 - 9x$

$y = -9x + 2$

form

$y = mx + b$

slope = m

y intercept b

slope $= m = -9$

(18) Find the slope of the line

$9x - 5y = 45$

$\cancel{9x} - 5y - \cancel{9x} = 45 - 9x$

$-5y = 45 - 9x$

$\frac{-5y}{-5} = \frac{45}{-5} - \frac{9x}{-5}$

$y = -9 + \frac{9}{5}x$

$y = \frac{9}{5}x - 9$

$y = mx + b$ form

Slope $= m$

y-intercept b

Slope $= m = \frac{9}{5}$

---

(19) determin whether the pair of lines are parallel, perpindicular, or neither.

$y = \frac{1}{3}x + 2 \qquad m_1 = \frac{1}{3}$,

$y = -\frac{1}{3}x \qquad m_2 = -\frac{1}{3}$

$m_1 \neq m_2 \quad \frac{1}{3} \neq -\frac{1}{3}$ not parallel

$m_1 \cdot m_2 = \left(\frac{1}{3}\right)\left(\frac{-1}{3}\right) = \frac{-1}{9} \neq -1$ Not perpindicular

Neither

---

(20) Find the slope-intercept form of the line whose slope is 3 and that passes through the point $(-3, 9)$

x_1 y_1

$m = \text{slope} = 3$ point $= (-3, 9)$

x_1 y_1

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

$$y - (9) = 3(x - (-3))$$

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

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

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

$$y = 3x + 18$$

(21.) determine whether each ordered pair is a solution of the system of linear equations

$2x - y = 5$

$x + 8y = 11$

$(4, 3)$

$x \quad y$

$2(4) - (3) = 5$

$8 - 3 = 5$

$5 = 5$ Good

$(4) + 8(3) = 11$

$4 + 24 = 11$

$28 \neq 11$ Bad

NO $(4, 3)$ is not a solution

$2x - y = 5$

$x + 8y = 11$

$(3, 1)$

$x \quad y$

$2(3) - (1) = 5$

$6 - 1 = 5$

$5 = 5$ Good

$(3) + 8(1) = 11$

$3 + 8 = 11$

$11 = 11$

Good

YES $(3, 1)$ is a solution

(22) $3x - y = 9$

$6x + y = 27$

$9x + 0 = 36$

$9x = 36$

$\frac{9x}{9} = \frac{36}{9}$

$x = 4$

Subst

$3x - y = 9$

$3(4) - y = 9$

$12 - y = 9$

$x - y - x = 9 - 12$

$-y = -3$

$\frac{-y}{-1} = \frac{-3}{-1}$

$y = 3$

$(x, y) = (4, 3)$

(23)

$x+4y=9$

$2x+3y=3$

$\begin{matrix} x+4y=9 \\ 2x+3y=3 \end{matrix}\begin{pmatrix} -3 \\ 4 \end{pmatrix}$ mult

$-3x-12y=-27$

$8x+12y=12$

$5x+0=-15$

$5x=-15$

$\frac{5x}{5}=\frac{-15}{5}$

$x=-3$

Substitute

$x+4y=9$

$(-3)+4y=9$

$-3+4y=9$

$-3+4y+3=9+3$

$4y=12$

$\frac{4y}{4}=\frac{12}{4}$

$y=3$

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

(24)

$3A+4C=109$
$2A+3C=77$

$(3A+4C=109)(-3)$ mult
$(2A+3C=77)(4)$

$-9A-12C=-327$
$8A+12C=308$

$-1A+0=-19$

$-1A=-19$

$\frac{-1A}{-1}=\frac{-19}{-1}$

$A=19$

subst

$3A+4C=109$

$3(19)+4C=109$

$57+4C=109$

$57+4C-57=109-57$

$4C=52$

$\frac{4C}{4}=\frac{52}{4}$

$C=13$

$(A, C)=(19, 13)$

25.

$$Q + N = 80$$
$$.25Q + .05N = 12.80$$

$$\begin{pmatrix} 1Q + 1N = 80 \\ .25Q + .05N = 12.80 \end{pmatrix} \begin{matrix} -.05 \\ 1 \end{matrix}$$

$$-.05Q - .05N = -4$$
$$.25Q + .05N = 12.80$$

$$.20Q + 0 = 8.8$$

$$.20Q = 8.8$$

$$\frac{.20Q}{.20} = \frac{8.8}{.20}$$

$$Q = 44$$

$(Q, N) = (44, 36)$

subst

$$Q + N = 80$$
$$44 + N = 80$$
$$44 + N - 44 = 80 - 44$$
$$N = 36$$

(26) $P(x) = x^2 + x + 1$ $P(7)$

$P(7) = (7)^2 + (7) + 1$

$P(7) = (7)(7) + (7) + 1$

$P(7) = 49 + 7 + 1$

$P(7) = 56 + 1$

$P(7) = 57$

(27.) $(4y^2 + 2y - 6) - (-5y + 3) =$

$4y^2 + 2y - 6 + 5y - 3 =$

$4y^2 + 7y - 9 =$

28 $(-9y^2-8y)+(8y^2+2y-3)=$

$-9y^2-8y+8y^2+2y-3=$

$-1y^2-6y-3=$

$-y^2-6y-3=$

29 $(8y+6)^2=$

$(8y+6)(8y+6)=$

$64y^2+48y+48y+36=$

$64y^2+96y+36=$

30) $(5x+7)(2x+8)$ =

$16x^2 + 40x + 14x + 56 =$

$16x^2 + 54x + 56 =$

---

31) $(x+6)(x^3 - 2x + 5) =$

$x^4 - 2x^2 + 5x + 6x^3 - 12x + 30 =$

$x^4 + 6x^3 - 2x^2 - 7x + 30 =$

32. $(2a-4)(5a^2+5a-6) =$

$10a^3 + 10a^2 - 12a - 20a^2 - 20a + 24 =$

$10a^3 - 10a^2 - 32a + 24 =$

33. $(10u+v)(10u-v) =$

$100u^2 - 10uv + 10uv - v^2 =$

$100u^2 - v^2$

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

$\frac{x^{-1(3)}y^{2(3)}}{x^{2(3)}y^{7(3)}} =$ Mult Powers

$\frac{x^{-3}y^{6}}{x^{6}y^{21}} =$

$\frac{y^{6}}{x^{6}y^{21}x^{3}} =$ rewrite

$\frac{1}{y^{21-6}x^{6+3}} =$

$\frac{1}{y^{15}x^{9}} =$

$\frac{1}{x^{9}y^{15}}$

35

$(8x^2+11x+10) \div (x+1)$

$$\frac{8x^2+11x+10}{x+1} =$$

Divide using synthetic division

opp

$$\begin{array}{r|rrr} -1 & 8 & 11 & 10 \\ & & -8 & -3 \\ \hline & 8 & 3 & 7 \end{array}$$

rem

$$8x+3+\frac{7}{x+1}$$