A ① The sum of a number and 9. Can be written as:

↳ $x+9$ or $9+x$

② Evaluate: $3x^2+5y+7$ if $x=-2$ and $y=3$.

↳ $3(-2)^2+5(3)+7$

$3(4)+15+7$

$12+15+7$

$27+7$

34

③ Solve for x. $x+5=17$.

$x+5=17$

$-5 \quad -5$

$x=12$

B ④ Solve for x: $4x+9=21$.

$4x+9=21$

$-9 \quad -9$

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

$\hookrightarrow x=3$

⑤ Solve for x. $5x+7=3x-9$.

$5x+7=3x-9$

$-3x \quad -7 \quad -3x \quad -7$

$\frac{2x}{2} = \frac{-16}{2}$

$\hookrightarrow x=-8$

⑥ Solve for x. $|x|-4=8$.

$|x|-4=8$

$+4 \quad +4$

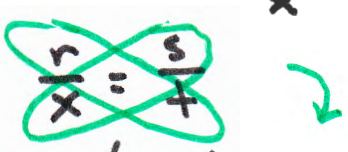
$|x|=12$

$x=12$ $\quad$ $x=-12$

C ⑦ Solve for x. $mx - n = y$.

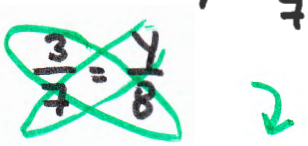
$$mx - n = y$$
$$+n \quad +n$$
$$\frac{mx}{m} = \frac{y+n}{m}$$
$$\hookrightarrow x = \frac{n+y}{m}$$

⑧ Solve for x. $\frac{r}{x} = \frac{s}{t}$.



$$\frac{xs}{s} = \frac{rt}{s}$$
$$\hookrightarrow x = \frac{rt}{s}$$

⑨ Solve for y. $\frac{3}{7} = \frac{y}{8}$



$$\frac{7y}{7} = \frac{24}{7}$$
$$\hookrightarrow y = \frac{24}{7}$$

D

(10) Simplify: $8xy^2+3xy+4xy^2-2xy$

$8xy^2+3xy+4xy^2-2xy$

↳ $12xy^2+xy$

(11) Simplify: $6x^2(4x^3y)$

↳ $24x^5y$

(12) $x^{-5} = \frac{1}{x^5}$

E

(13) Simplify: $(5x+2z)+(3x-4z)$

$5x+2z+3x-4z$

↳ $8x-2z$

(14) Simplify: $(4x-7z)-(3x-4z)$

$4x-7z-3x+4z$

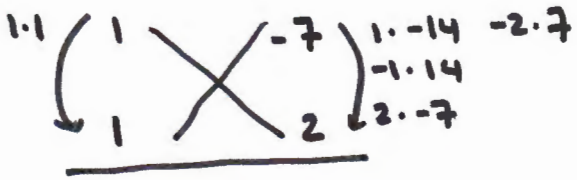
↳ $x-3z$

(15) Factor $ab+ac$

↳ $a(b+c)$

F

(16) Factor $x^2 - 5x - 14$



$(x-7)(x+2)$

(17) Solve $x^2 + 7x = -10$

$+10 \quad +10$

$x^2 + 7x + 10 = 0$

$(x+5)(x+2) = 0$

$x+5=0$ $\quad -5 \quad -5$

$x = -5$

$x+2=0$ $\quad -2 \quad -2$

$x = -2$

(18) Solve for x: $2x + 3 \leq 11$

$2x + 3 \leq 11$

$-3 \quad -3$

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

$x \leq 4$

G

(19) Solve for x: $3x + 4 \geq 5x - 8$.

$3x + 4 \geq 5x - 8$

$-5x \quad\quad -5x$

$-2x + 4 \geq -8$

$\quad -4 \quad\quad -4$

$\frac{-2x}{-2} \geq \frac{-12}{-2}$

$x \leq 6$

(20) Solve for x: $|x - 3| < 6$

$|x - 3| < 6$

$x - 3 < 6$ $\quad\quad$ $x - 3 > -6$

$+3 \quad +3$ $\quad\quad$ $+3 \quad +3$

$x < 9$ $\quad\quad$ $x > -3$

(21) Solve for x. $2|x| + 4 \geq 8$.

$2|x| + 4 \geq 8$

$\quad -4 \quad -4$

$\frac{2|x|}{2} \geq \frac{4}{2}$

$|x| \geq 2$

$x \geq 2$ $\quad\quad$ $x \leq -2$

H (22) Solve this system for x and y.

$2(8x + 2y = 7) \rightarrow 16x + 4y = 14$

$3x - 4y = 5 \quad\quad 3x - 4y = 5$

$19x = 19$

$\frac{19x}{19} = \frac{19}{19}$

$x = 1$

$3(1) - 4y = 5$

$3 - 4y = 5$

$-3 \quad -3$

$-4y = 2$

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

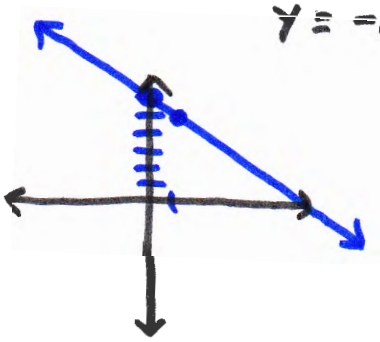
$y = -\frac{1}{2}$

$(1, -\frac{1}{2})$

(23) Graph $x + y = 6$

$-x \quad -x$

$y = -x + 6$



I (24) What is the slope and the y-intercept of $y = 6x + 2$?

$m = 6$ $b = 2$ or $(0, 2)$

(25) What is the equation of the line passing through the points $(3, 6)$ and $(2, -3)$?

x_1, y_1 x_2, y_2

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - 6}{2 - 3} = \frac{-9}{-1} = +9$$

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

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

$$y - 6 = 9x - 27$$

$$+6 \qquad +6$$

$$y = -9x - 21$$