

SOLVING EQUATIONS
& GRAPHING

FEB 6
2003

PER:

NAME:

SOLVE EACH EQUATION (COMBINE LIKE TERMS WHERE POSSIBLE FIRST)

① $x + 6 = 24$

② $-8 + 2x = 61$

③ $4x + 3x - 16 + 9 + 1 = 21$

④ $12x + 20 = 4x + 84$

⑤ $16x - 14x + 12x + 10 - 20 = 71 + 4$

USE GRAPH PAPER, GRAPH AND LABEL THE FOLLOWING LINES

⑥ $y = 2x + 4$

⑦ $y = -3x - 2$

⑧ $y = -\frac{1}{2}x$

⑨ $y = x + 1$

NOTE: $y = mx + b$

↑

↑

SLOPE

Y-INTERCEPT

① $x + 6 = 24$ SUBTRACT 6 from both sides Remember, goal is to get x by itself

$$\begin{array}{r} x + 6 = 24 \\ -6 \quad -6 \\ \hline x = 18 \end{array}$$
 ← ANSWER
 EX) $x = \text{some number}$

② $-8 + 2x = 61$ Add 8 to each side

$$\begin{array}{r} -8 + 2x = 61 \\ +8 \quad +8 \\ \hline 2x = 69 \end{array}$$
 ÷ both sides by 2

$$\frac{2x}{2} = \frac{69}{2}$$

 $x = \frac{69}{2}$ ← ANSWER

③ $4x + 3x - 16 + 9 + 1 = 21$ Combine 'like' terms

$$\begin{array}{r} 4x + 3x - 16 + 9 + 1 = 21 \\ \swarrow \quad \searrow \\ 7x - 6 = 21 \\ \hline 7x - 6 + 6 = 21 + 6 \\ \hline 7x = 27 \end{array}$$
 Add 6 to both sides

$$\frac{7x}{7} = \frac{27}{7}$$
 ÷ both sides by 7
 $x = \frac{27}{7}$ ← ANSWER

④ $12x + 20 = 4x + 84$ Subtract $4x$ from each side

$$\begin{array}{r} 12x + 20 = 4x + 84 \\ -4x \quad -4x \\ \hline 8x + 20 = 84 \end{array}$$

$$\begin{array}{r} 8x + 20 = 84 \\ -20 \quad -20 \\ \hline 8x = 64 \end{array}$$
 Subtract 20 from both sides

$$\frac{8x}{8} = \frac{64}{8}$$
 ÷ both sides by 8
 $x = 8$ ← ANSWER

⑤ $16x - 14x + 12x + 10 - 20 = 71 + 4$

COMBINE 'Like' terms

$$\begin{array}{r} 14x \quad - 10 \\ \hline \quad \quad + 10 \end{array} = \begin{array}{r} 75 \\ + 10 \end{array}$$

Add 10 to both sides

$$14x = 85$$

÷ both sides by 14

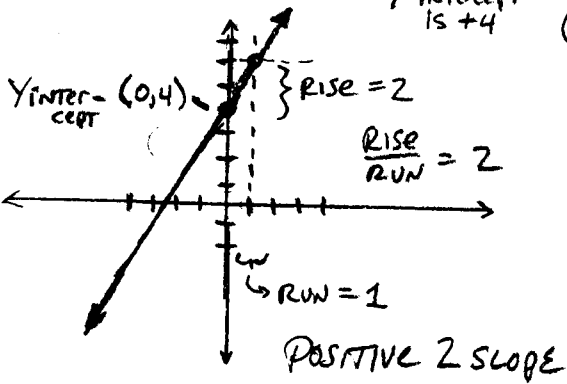
$$\frac{14x}{14} = \frac{85}{14}$$

x

$$= \frac{85}{14} \leftarrow \text{ANSWER}$$

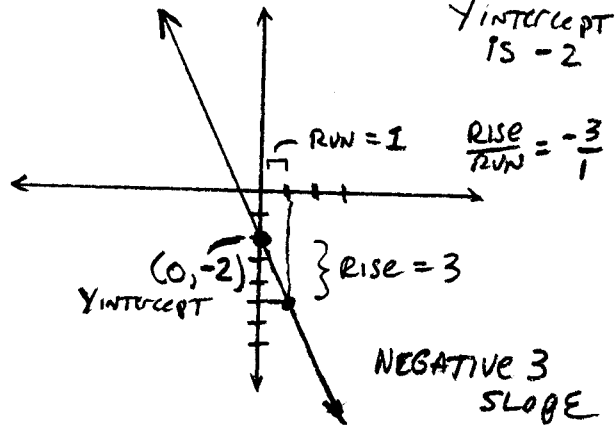
⑥

$y = 2x + 4$ Slope = 2
Y-intercept is +4



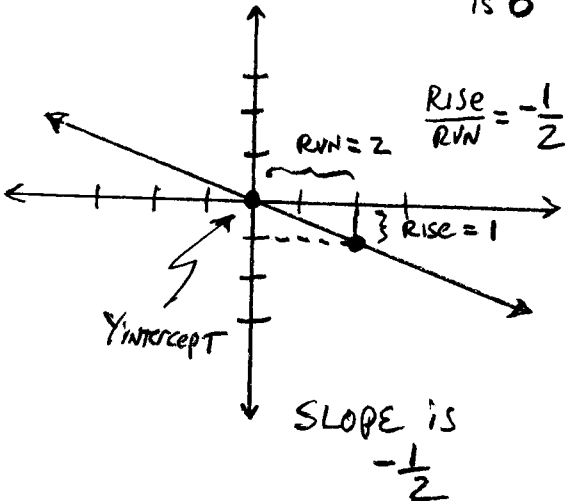
⑦

$y = -3x - 2$ Slope = -3
Y-intercept is -2



⑧

$y = -\frac{1}{2}x$ Slope = $-\frac{1}{2}$
Y-intercept is 0



⑨

$y = x + 1$ Slope is 1
Y-intercept is 1

