Find the slope + describe the line as rising, falling, vertical, or horizontal:

(8) (5,3) (-5,-3)

$m = \frac{-3-3}{-5-5}$

$m = \frac{-6}{-10}$

$m = \frac{3}{5}$

(9) (-2,-3)(8,-3)

$m = \frac{-3-(-3)}{8-(-2)}$

$m = \frac{0}{10}$

$m = 0$

(10) (-10,5)(-10,2)

$m = \frac{2-5}{-10-(-10)}$

$m = \frac{-3}{0}$

Undefined!

Write the equation of the line described:

(11) slope = -3 thru (8,-4)

$y = -3x + b$

$-4 = -3(8) + b$

$-4 = -24 + b$

$20 = b$

$y = -3x + 20$

(12) thru (-1,-5) and (3,7)

$m = \frac{7-(-5)}{3-(-1)}$

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

$m = 3$

$7 = 3(3) + b$

$7 = 9 + b$

$-2 = b$

$y = 3x - 2$

(13) thru (-2,7) + (-2,1)

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

$m = \frac{-6}{0}$ undefined

$x = -2$

(14) Parallel to $y = -2x - 3$ thru (2,-3) $m_{\parallel} = -2$

$-3 = -2(2) + b$

$-3 = -4 + b$

$1 = b$

$y = -2x + 1$

(15) $\perp$ to $-3x + 4y = -1$ thru (6,0)

$\frac{4y}{4} = \frac{3x}{4} - \frac{1}{4}$

$y = \frac{3}{4}x - \frac{1}{4}$

$m_{\perp} = -\frac{4}{3}$

$0 = -\frac{4}{3}\left(\frac{6}{1}\right) + b$

$0 = -\frac{24}{3} + b$

$0 = -8 + b$

$8 = b$

$y = -\frac{4}{3}x + 8$

Solve:

① $\frac{9}{4} = \frac{3a}{20}$

$12a = 180$

$a = 15$

② $\frac{c+2}{45} = \frac{8}{5}$

$5c + 10 = 360$

$5c = 350$

$c = 70$

③ $\frac{n+8}{5n-2} = \frac{3}{8}$

$8(n+8) = 3(5n-2)$

$8n + 64 = 15n - 6$

$70 = 7n$

$n = 10$

④ 117 is 78% of what number?

$\frac{117}{x} = \frac{78}{100}$

$78x = 11760$

$x = 150$

⑤ What percent of 56 is 21?

$\frac{x}{100} = \frac{21}{56}$

$56x = 2100$

$x = 37.5$

Solve each equation for x:

⑥ $\frac{a(x+b)}{a} = \frac{c}{a}$

$x + b = \frac{c}{a}$

$x = \frac{c}{a} - b$

⑦ $\frac{x}{a} + b = 2$

$\frac{x}{a} = 2 - b$

$x = a(2 - b)$