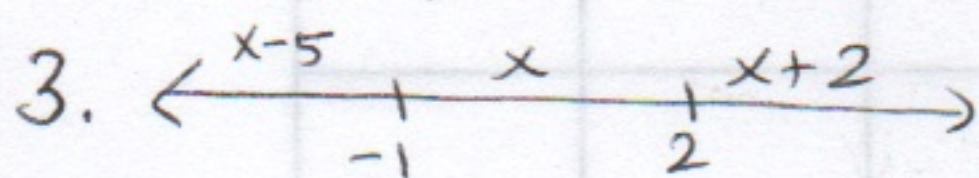


- 1a. Yes
- 1b. No
- 1c. Yes

2a. $\{ -3, -2, 0, 4, 8 \}$

2b. $\{ 3, 5, 9, -10 \}$

2c. Yes



3a. $G(0) = \boxed{0}$

3b. $G(-3) = -3 - 5 = \boxed{-8}$

3c. $G(5) = 5 + 2 = \boxed{7}$

4a. $x - 15 \neq 0$
 $+15 \quad +15$
 $\boxed{x \neq 15}$

4b. $\boxed{\mathbb{R}}$

5a. $x_1 = 1994 - 1990 = 4$

$x_2 = 2004 - 1990 = 14$

$(x_1, y_1) = (4, 79)$ $(x_2, y_2) = (14, 80.4)$

$m = \frac{80.4 - 79}{14 - 4}$

$= \frac{1.4}{10}$

$= .14$

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

$y - 79 = .14(x - 4)$

$y - 79 = .14x - .56$
 $+79 \quad +79$

$y = .14x + 78.44$

or

$\boxed{E(t) = .14t + 78.44}$

5b. $t = 2012 - 1990 = 22$

Plug in 22 for t!

$E(22) = .14(22) + 78.44 = \boxed{81.52 \text{ years}}$

9. $y = \frac{k}{x}$

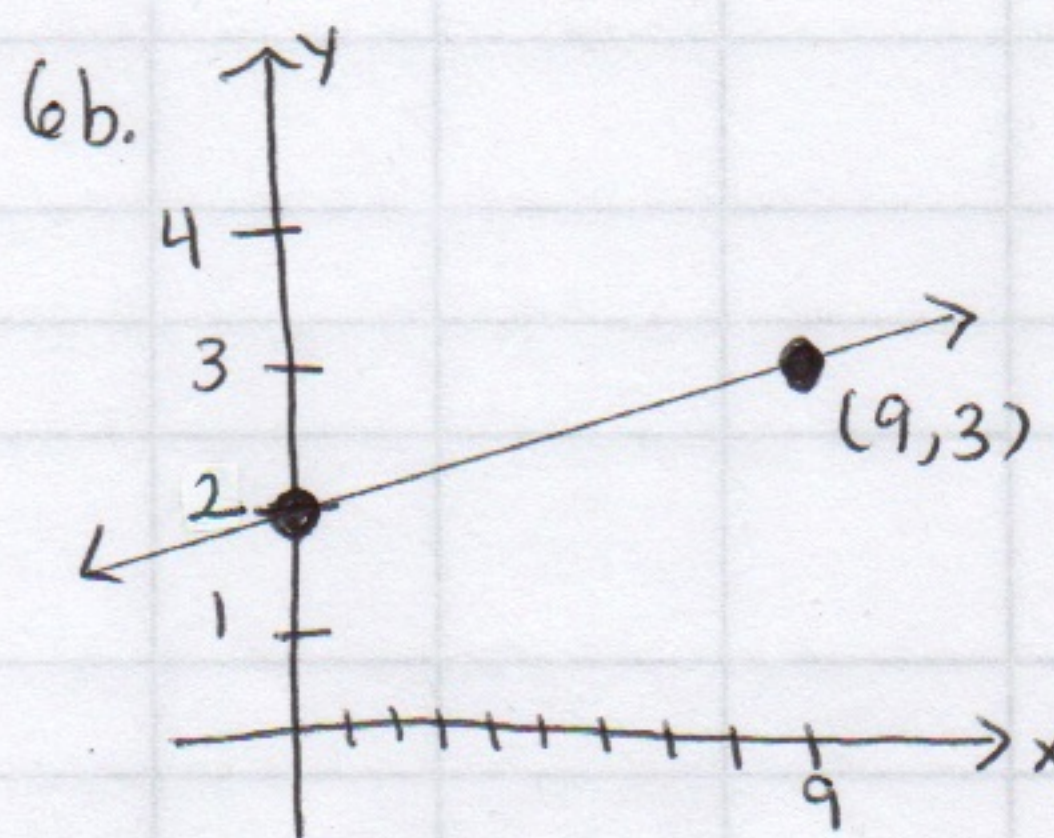
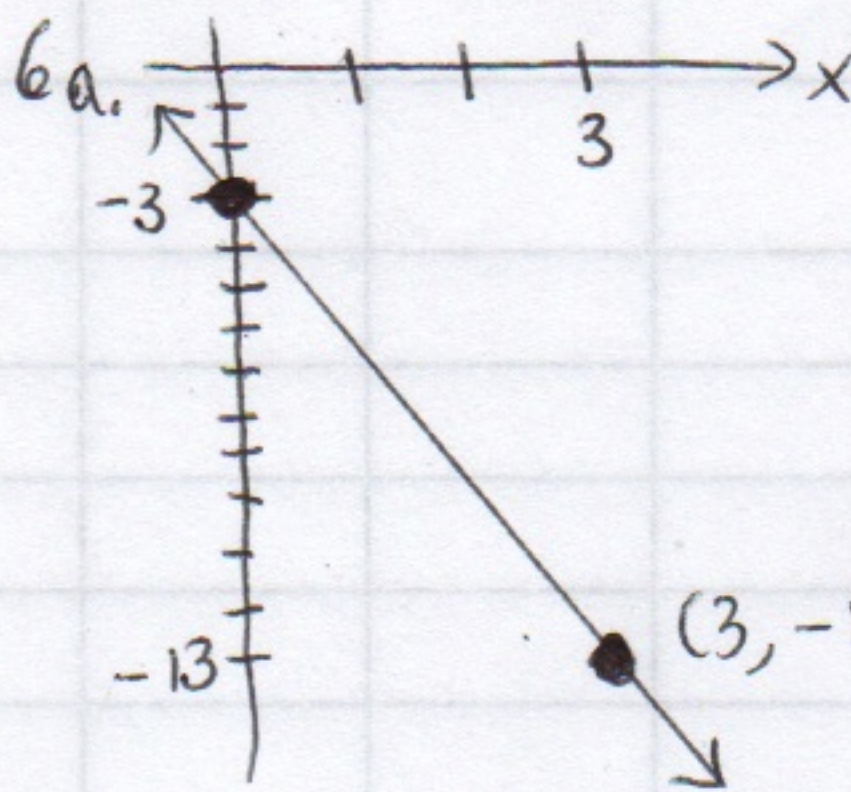
$33 \cdot 260 = \frac{k}{33}, 33$

$8580 = k$

$y = \frac{8580}{x}$

$y = \frac{8580}{30}$

$= \boxed{286 \text{ Hz}}$



7a. $F(x) + G(x) = x^2 - 2 + 5 - x = \boxed{x^2 - x + 3}$

7b. $F(3) - G(3) = (3^2 - 2) - (5 - 3) = (9 - 2) - 2 = 7 - 2 = \boxed{5}$

8. $y = kx$
 $\frac{15.75}{7} = \frac{k(7)}{7}$

$2.25 = k$
 $y = 2.25x$

$\frac{27}{2.25} = \frac{2.25x}{2.25} \rightarrow \boxed{x = 12 \text{ people}}$

10a. $3s - 4t = 14$

$4(5s + t = 8)$

$3s - 4t = 14$

$20s + 4t = 32$

$\frac{23s}{23} = \frac{46}{23}$

$s = 2$

$5s + t = 8$

$5(2) + t = 8$

$10 + t = 8$

$-10 \quad -10$

$t = -2$

$\boxed{(2, -2)}$

10b. $-2(5x - 7y = -16)$

$5(2x + 8y = 26)$

$-10x + 14y = 32$

$10x + 40y = 130$

$\frac{54y}{54} = \frac{162}{54}$

$y = 3$

$2x + 8y = 26$

$2x + 8(3) = 26$

$2x + 24 = 26$
 $-24 \quad -24$

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

$x = 1$

$\boxed{(1, 3)}$