

- ① a) Parallel
 b) Neither
 c) Neither

② a) $m_1 = 3/4$ $m_2 = 5/4$ Neither

b) $m_1 = \frac{4}{-18} = -2/9$ $m_2 = -2/9$ Parallel

③ $y-8 = \frac{1}{5}(x-3)$ P.S.
 ~~$y = -\frac{1}{5}x - \frac{3}{5} + \frac{40}{5}$~~
 $y = -\frac{1}{5}x + \frac{37}{5}$

Perpendicular
 $y-8 = -5(x-3)$ P.S.
 $-5x + y = 15 + 8$
 $5x - y = -23$ Standard

$\frac{1}{5}x + y = \frac{37}{5}$
 $x + 5y = 37$ Standard.

④ $y-5 = 3(x-4)$ P.S.
 $y-5 = 3x-12$
 $-3x + y = -7$
 $3x - y = 7$ Stand.

$y-5 = -1/3(x-4)$ P.S.
 $y-5 = (-1/3)x + 4/3$
 $\frac{1}{3}x + y = \frac{15}{3} + \frac{4}{3}$
 $x + y = 19$ Stan.

⑤ $x = -3$ $y = 7$

⑥ a) $y-2 = 1(x+2)$
 $y = x$

b) $y-7 = 2(x-16)$
 $y = 2x + 25$

⑦ No opposite sides don't have same slope.

⑧ $m = \frac{7}{4}$
 Not right
 \rightarrow Not opposite reciprocal.

(9) No solution because they are parallel.

(10) No, unless they are the same line.

$$(11) \frac{k+2}{-1+7} = \frac{-1}{1} \neq$$

$$\frac{k+2}{6} = \frac{-1}{1} \rightarrow -6 = k+2$$
$$\boxed{-8 = k}$$

$$(12) \frac{k-3}{9+21} = \frac{k-3}{30} = \frac{2}{3}$$

$$3k - 9 = 60$$
$$3k = 69$$

$$\boxed{k = 23}$$

$$(13) m = 0.27$$

$$\boxed{y = 0.27x + 0.03}$$

$$y = 0.27(18) + 0.03$$

$$\boxed{y = 4.89}$$

~~1997~~ $x=0$ is 1997

$$(14) \frac{10,000}{8} = 1250 \text{ per year}$$

$$\boxed{y = -1250x + 12000}$$