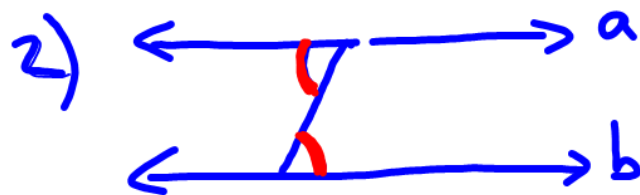
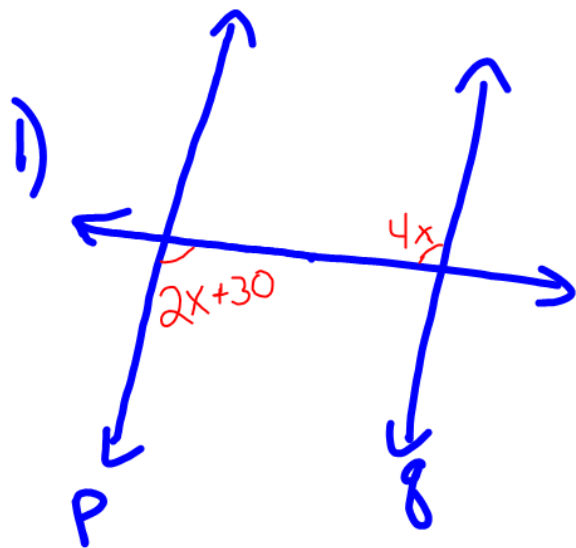


Warm-up

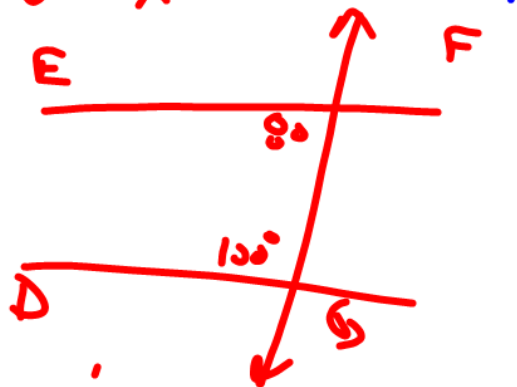
Find x so $p \parallel q$. What proves $a \parallel b$?



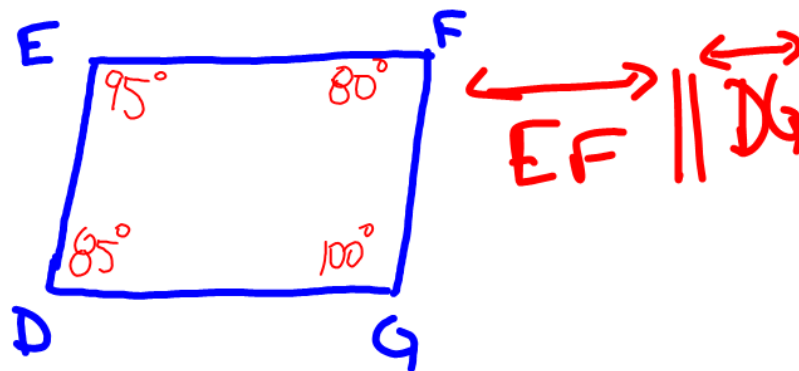
Alt int \angle s are \cong

$$2x + 30 = 4x$$

$$15 = x$$

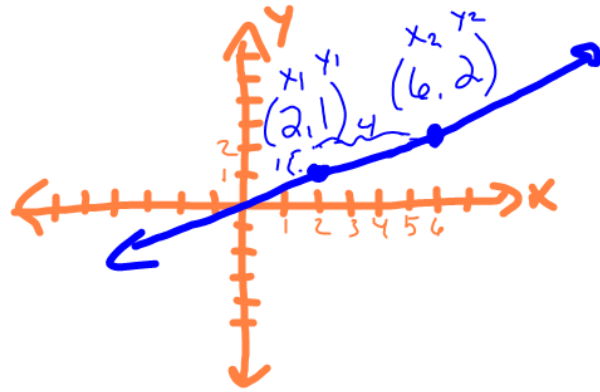


Which lines are parallel?



3.4 Find Slope of Lines

* Directions from one point to another



$$m = \frac{\text{rise}}{\text{run}} = \text{Slope}$$

$$\text{or } \frac{y_1 - y_2}{x_1 - x_2}$$

$$\text{So } m = \frac{2-1}{6-2} = \frac{1}{4} \quad \frac{\text{rise } 1}{\text{run } 4} \quad \text{or} \quad \frac{\uparrow 1}{\rightarrow 4}$$

Rate of change: Speed (miles per hr)

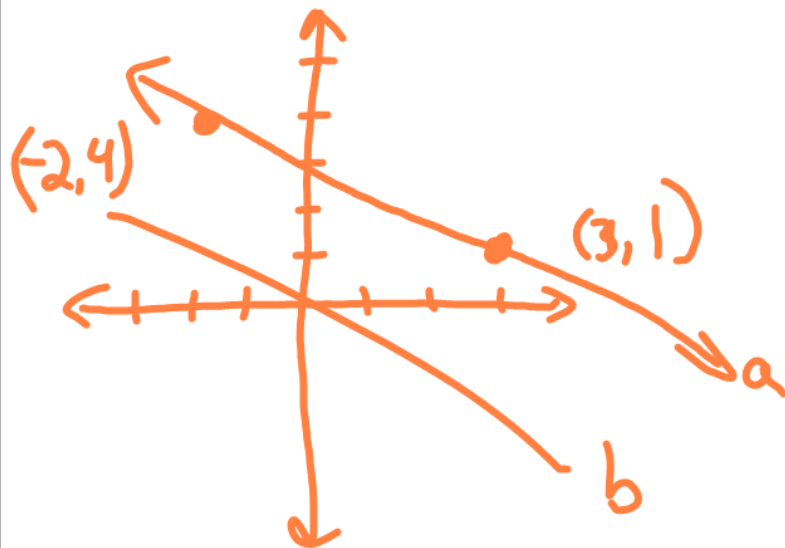
Salary (\$ per hr)

— per —

1) Find the slope from $(-2, 4)$ to $(3, 1)$

$$\frac{1-4}{3-(-2)} = \frac{-3}{5} = -\frac{3}{5}$$
$$\frac{4-1}{-2-3} = \frac{3}{-5} = -\frac{3}{5}$$

Special Lines



$$\text{slope of } a = -\frac{3}{5}$$

$$\text{slope of } b = -\frac{3}{5}$$

* parallel lines have the same slope

Perpendicular lines:

If slope of $a = -\frac{3}{5}$, a \perp line has slope

of $+\frac{5}{3}$ (opposite sign, opposite places
...reciprocal)

$$\text{If } m=3 \quad \parallel m=3 \quad \perp m=-\frac{1}{3}$$

$$1) m = -\frac{80}{7}$$

$$\parallel m = -\frac{80}{7}$$

$$\perp m = +\frac{7}{80}$$

$$2) m = \frac{2}{3}$$

$$\parallel m = \frac{2}{3}$$

$$\perp m = -\frac{3}{2}$$