Warm up

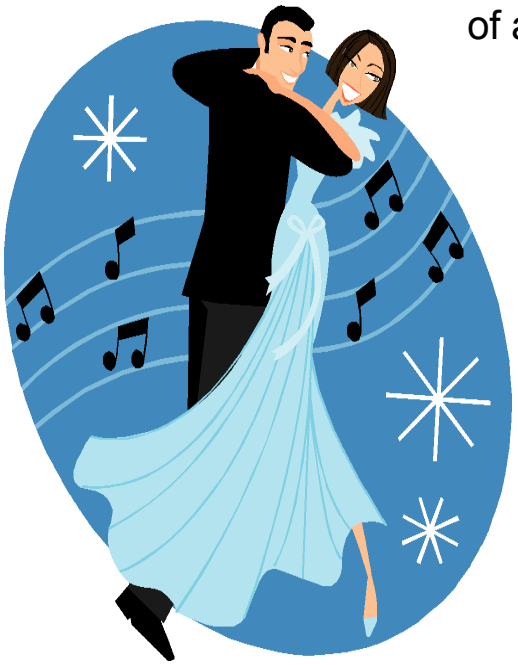
1. What are the three things you need to determine the equation of a line?

2. Determine the equation of a vertical line passing through the point (-3, 5).

3. Determine the equation of a line passing through the points (5, -2) and (2, 8).

State answers in standard form.

1. What are the three things you need to determine the equation of a line?



SLOPE

POINT

(X,Y)

2. Determine the equation of a vertical line passing through the point (-3, 5).

SLOPE $\frac{1}{0}$ $x_1\ y_1$

POINT (-3, 5)

(X,Y) (x,y) $x_2\ y_2$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{1}{0} = \frac{y-5}{x+3}$$

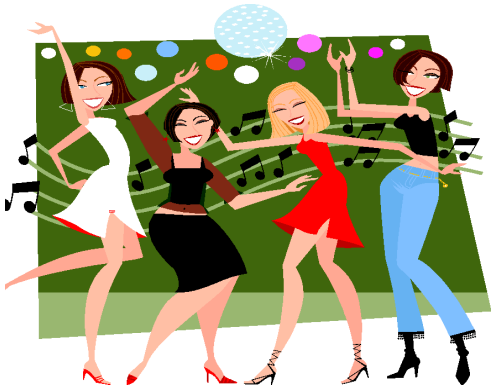
$$x+3=0$$

$X=-3$

$X+3=0$

$1(X+3)=0(y-5)$

$X+3=0$



SLOPE $\frac{-10}{3}$

POINT ~~(5, -2)~~ (2, 8)

(X,Y) (x,y)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{8+2}{2-5}$$

$$m = \frac{10}{-3}$$

$$m = \frac{-10}{3}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-10}{3} = \frac{y+2}{x-5}$$

$$-10(x-5) = 3(y+2)$$

$$-10x + 50 = 3y + 6$$

$$-10x - 3y + 44 = 0$$

$$10x + 3y - 44 = 0$$

$$3y = -10x + 44$$

$$y = -\frac{10}{3}x + \frac{44}{3}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-10}{3} = \frac{y-8}{x-2}$$

$$-10(x-2) = 3(y-8)$$

$$-10x + 20 = 3y - 24$$

$$-10x - 3y + 44 = 0$$

$$10x + 3y - 44 = 0$$

with a slope of $-\frac{1}{3}$
and an y-interept of 4.

Slope: $-\frac{1}{3}$

Point: $(0, 4)$

(x, y)

Attachments

SN00229A[1].wav