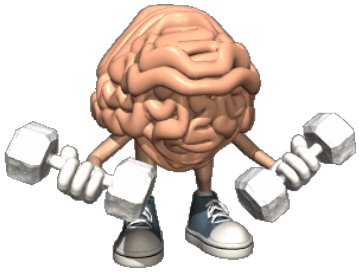
Warm Up



1)Given (-3,-4) and (1,-6), write an equation for the line in:

a) Point slope

b) Slope Intercept

c)General

2) Given $\frac{-3x}{2}-4y=6$, find

a) Slope

b) General Form

c) Y- Intercept

c) X-Intercept

1)Given (-3,-4) and (1,-6), write an equation for the line in:

a) Point slope

b) Slope Intercept

c)General

$\frac{y_2-y_1}{x_2-x_1}$ $\frac{-6-(-4)}{1-(-3)}$ $\frac{-2}{4}$ $m=-\frac{1}{2}$

a) $y-y_1=m(x-x_1)$ slope, point $(-3,-4)$

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

a) $y+4=-\frac{1}{2}(x+3)$

b) $y=mx+b$

$2y+8=-1(x+3)$

$2y+8=-1x-3$

$2y=-1x-3-8$

$\frac{2y}{2}=\frac{-1x}{2}-\frac{11}{2}$

b) $y=-\frac{1}{2}x-\frac{11}{2}$

can't be negative

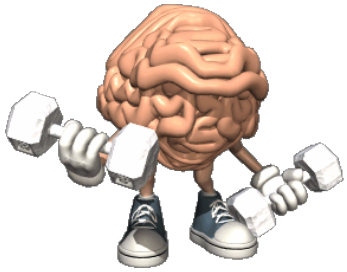
c) $Ax+By+C=0$

$y=-\frac{1}{2}x-\frac{11}{2}$

$\frac{1}{2}x+y+\frac{11}{2}=0$

$1x+2y+11=0$

Warm Up



2) Given $-3x-4y=6$, find

a) Slope

$-\frac{3}{8}$

b) General Form

$-3x-8y=12$

c) Y- Intercept

$-\frac{3}{2}$

c) X-Intercept

let $y=0$

$3x+8(0)+12=0$

$3x+12=0$

$3x=-12$

$\frac{3x}{3}=\frac{-12}{3}$

$x=-4$

$-4y=3x+6 \div -4$

$\frac{-4y}{-4}=\frac{3x}{-4}+\frac{6}{-4} \div 2$

$y=mx+b \quad m=-\frac{3}{8}$

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

$0=3x+8y+12$

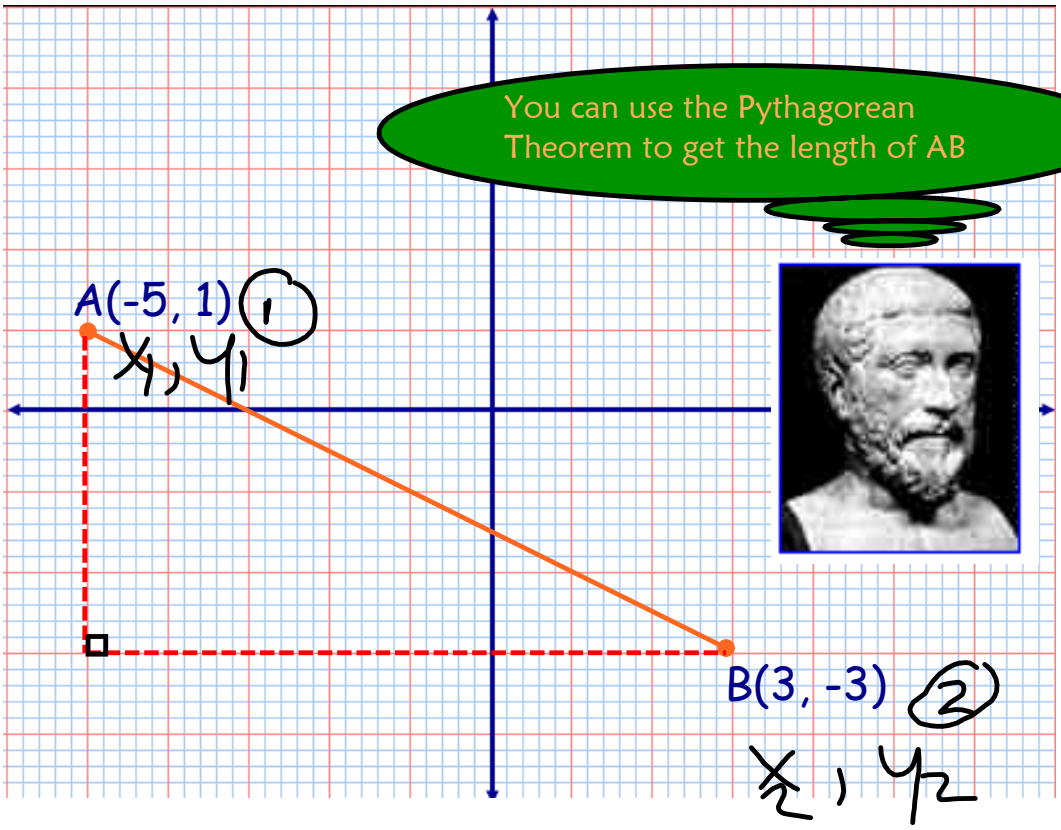
$0=3(0)+8y+12$

$0=8y+12$

$\frac{-12}{8}=\frac{8y}{8}$

$-\frac{3}{2}=y$

Distance between two points



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$[3-(-5)]^2 + (-3-1)^2$

$(8)^2 + (-4)^2$

$64 + 16$

$\sqrt{80}$

$= 8.9$

#2. What is the distance between (-3,4) and (10, 6)?

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{[10-(-3)]^2 + (6-4)^2}$$

$$\sqrt{(13)^2 + (2)^2}$$

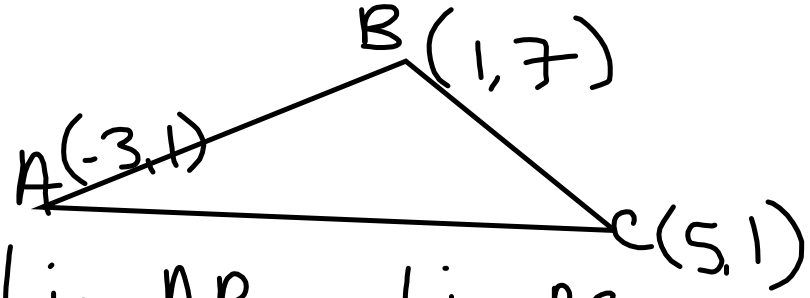
$$\sqrt{169 + 4}$$

$$\sqrt{173}$$

$$13.2$$

Examples...

#1. Use the distance formula to show that the triangle with vertices A(-3, 1); B(1, 7) & C(5, 1) is iscosceles.



Line AB

$\sqrt{(1+3)^2+(7-1)^2}$

$(4^2)+(6)^2$

$\sqrt{52}$

$=7.2$

Line BC

$\sqrt{(5-1)^2+(1-7)^2}$

$(4)^2+(-6)^2$

$\sqrt{52}$

$=7.2$

Line AC

$\sqrt{(5+3)^2+(1-1)^2}$

$\sqrt{(8)^2+(0)^2}$

$\sqrt{64}$

$=8$