7.5 Using the Pythagorean Theorem p. 320

Converse of the Pythagorean Theorem:
if $a^2+b^2=c^2$ for a triangle, then the triangle is a right triangle

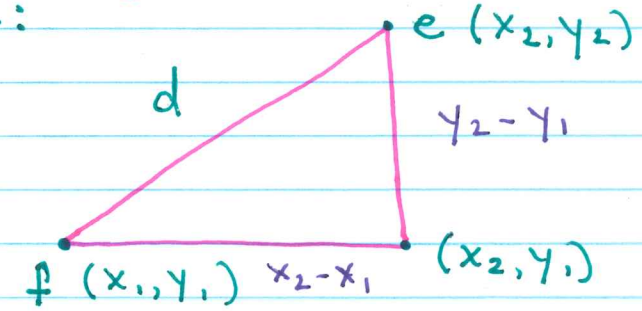
Tell whether each triangle is a right triangle:

a) 40cm, 9cm, 41cm
41 is the biggest #, so it must be the hypotenuse (c)
$9^2+40^2 \stackrel{?}{=} 41^2$
$81+1600 = 1681$
$1681 = 1681$
Yes, it is a right Δ

b) 24 ft, 12ft, 18 ft
24 is the biggest #, so it must be the hypotenuse (c)
$12^2+18^2 \stackrel{?}{=} 24^2$
$144+324 = 576$
$468 \neq 576$
No, it is not a right Δ; it is just a regular Δ

Using the distance formula to find the distance between any two points in a coordinate plane:

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



Find the distance btw (1, 5) and (-4, -2)

x	y
1	5
-4	-2

$$\sqrt{(1-(-4))^2+(5-(-2))^2}$$
$$\sqrt{(1+4)^2+(5+2)^2}$$
$$\sqrt{5^2+7^2}$$
$$\sqrt{25+49}$$
$$\sqrt{74}$$