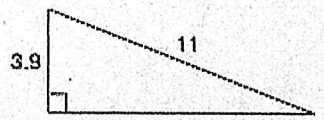
Key

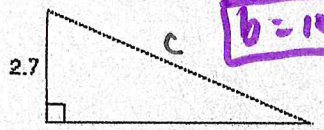
SLOT Week 6 – Right Triangles  I can apply the Pythagorean Theorem $(a^2 + b^2 = c^2)$ to solve right triangles.

## M

1. Solve for the missing side

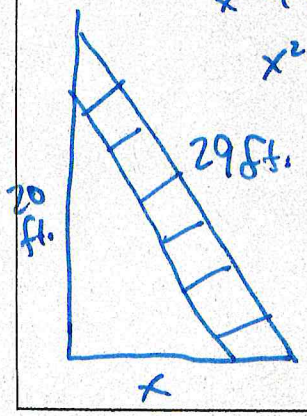



a) $a^2+b^2=c^2$
$3.9^2+b^2=11^2$
$15.21+b^2=121$
$b^2=105.79$
$b=10.3$




b) $2.7^2+6.5^2=c^2$
$49.54=c^2$
$7.04=c$

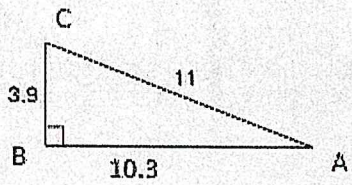
2. A ladder height of 29 feet long is kept on the wall of height 20 feet as an incline. What may be the distance between the bottom of the wall and base of the ladder?




$x^2+20^2=29^2$
$x^2+400=841$
$x^2=441$
$x=21$ ft

## T

1. Using the right triangle ABC, write the ratio for each of the following

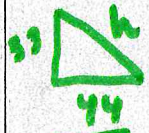



sin A= $\frac{3.9}{11}$  Sin C= $\frac{10.3}{11}$

Cos A= $\frac{10.3}{11}$  cos C= $\frac{3.9}{11}$

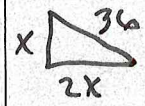
Tan A= $\frac{3.9}{10.3}$  tan C= $\frac{10.3}{3.9}$

2. In a right angle triangle with two legs of 33 and 44 feet, what is the length of the hypotenuse?




$33^2+44^2=h^2$
$1089+1936=h^2$
$\sqrt{3025}=h$
55 ft.

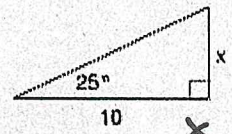
3. One leg of the right angle triangle is two times the other leg of the triangle. If the hypotenuse is 36 cm, then what is largest ~~side~~ leg length?



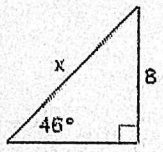

$x^2+(2x)^2=36^2$
$x^2+4x^2=1296$
$5x^2=1296$
$x^2=259.2$
$x=16.1$
$2x=32.2$ cm

## W

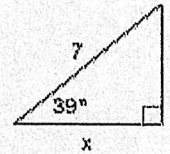
1. Determine the value of x




a) $\tan 25=\frac{x}{10}$
$4.7=x$

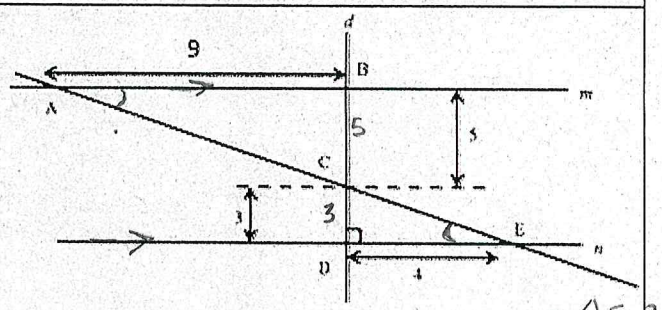



b) $\sin 46=\frac{8}{x}$
$x=\frac{8}{\sin 46}=11.1$



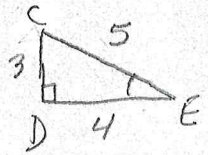

c) $\cos 39=\frac{x}{7}$
$7(\cos 39)=x$
$5.4=x$

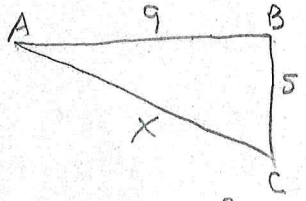
## TH




In the figure above line n is parallel to line m, line d is perpendicular to line n and line e intersects line m and n. What is the difference between the hypotenuse AC and CE?

→ Δs are similar by AA similarity

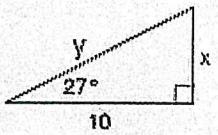



$10.3-5=5.3$

$5^2+9^2=x^2$
$25+81=x^2$
$106=x^2$
$10.3=x$

2. What is the difference between y and x?




$\tan 27=\frac{x}{10}$
$10(\tan 27)=x$
$5.1=x$

$\cos 27=\frac{10}{y}$
$y=\frac{10}{\cos 27}$
$y=11.2$

$11.2-5.1=6.1$