Goals For Today

SRT.6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

SRT.7 Explain and use the relationship between the sine and cosine of complementary angles.

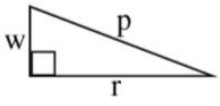
SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

Pythagorean Theorem Review

Previous Knowledge:

1) The largest side of a triangle is across (opposite) from the largest angle.
2) The hypotenuse of a right triangle is always across from the right angle.
3) The Pythagorean Theorem is $a^2+b^2=c^2$. And c is always used for the hypotenuse.

Ex. 1) What variable represents the hypotenuse? p



b) If p = 18 and r = 15 then w = ____.

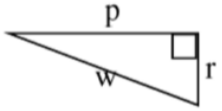
$15^2+w^2=18^2$

$225+w^2=324$

$w^2=99$

$w=3\sqrt{11}$

Ex. 2) What variable represents the hypotenuse? w



b) If p = 25 and r = 24 then w = ____.

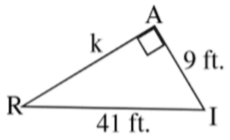
$25^2+24^2=w^2$

$625+576=w^2$

$1201=w^2$

$\sqrt{1201}=w$

3.



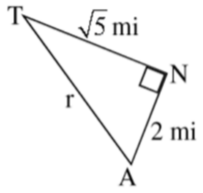
$k^2+9^2=41^2$

$k^2+81=1681$

$k^2=1600$

$k=40$ ft

4.



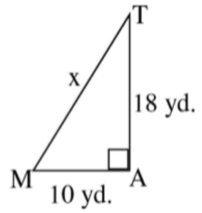
$2^2+\sqrt{5}^2=r^2$

$4+5=r^2$

$9=r^2$

$3=r$

5.



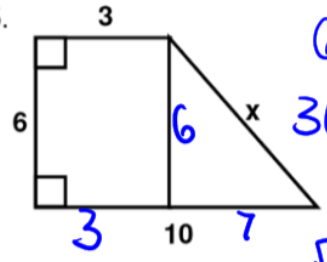
$18^2+10^2=x^2$

$324+100=x^2$

$424=x^2$

$2\sqrt{106}=x$

5.



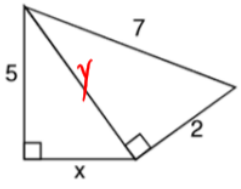
$6^2+7^2=x^2$

$36+49=x^2$

$85=x^2$

$\sqrt{85}=x$

6.



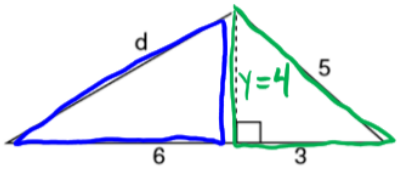
$y^2+2^2=7^2$

$y^2+4=49$

$y^2=45$

$y=3\sqrt{5}$

7.



$4^2+6^2=d^2$

$16+36=d^2$

$52=d^2$

$2\sqrt{13}=d$

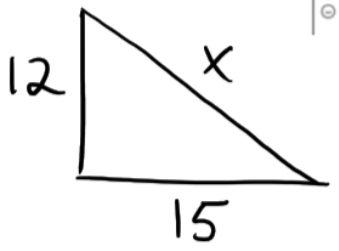
$3^2+y^2=5^2$

$9+y^2=25$

$y^2=16$

$y=4$

8. The slide at the playground is 12 feet tall. If the bottom of the slide is 15 feet from the base of the ladder, how long is the slide?



$12^2+15^2=x^2$

$144+225=x^2$

$369=x^2$

$3\sqrt{41}=x$