Name **Key**   Trig WS

Given △RST

R

5

3

S ——— T
    4

1. Find the sin∠R = $\frac{4}{5}$

2. Find the cos ∠T = $\frac{4}{5}$

3. Find the tan ∠R = $\frac{4}{3}$

Given △ABC below,

A

5   10

B ——— C
  $5\sqrt{3}$

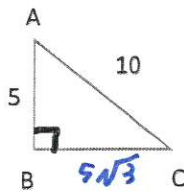$\frac{5\sqrt{3}}{10}$ $\frac{\sqrt{3}}{2}$

$\frac{5}{5\sqrt{3}}$

$\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$

4. Find the sin ∠ A = $\frac{\sqrt{3}}{2}$

5. Find the cos ∠ C = $\frac{\sqrt{3}}{2}$
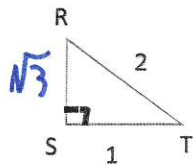
6. Find the tan ∠C = $\frac{\sqrt{3}}{3}$

7. What do you know about the acute angles of a right triangle? **they are complementary**

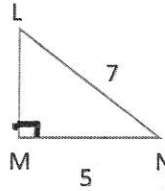8. For each of the following triangles, find the sin and cos of the indicated angles.

A
    10
5
B $5\sqrt{3}$ C

R
        2
$\sqrt{3}$
S   1   T

L
        7
M   5   N

Sin A = $\frac{\sqrt{3}}{2}$

Cos C = $\frac{\sqrt{3}}{2}$

sin R = $\frac{1}{2}$

cos T = $\frac{1}{2}$

Sin L = $\frac{5}{7}$

cos N = $\frac{5}{7}$

9. What do you notice about the sine and cosine of complementary angles of a right triangle? **Same**
What does this mean? **sine & cosine of complentary angles are equal**

10. For what value of ϑ is cos ϑ = sin 40°? **50**

11. For what value of ϑ is cos ϑ = sin 70°? **20**

12. For what value of ϑ is sin ϑ = cos 25°? **55**

13. Find the sin 45°. $\frac{\sqrt{2}}{2}$ Find the cos 20°. **0,9397**
    0,7071

14. $\triangle ABC$ is a right triangle. One of the acute angles measures 36°. What is the cosine of the other acute angle? $\sin 36 = 0.5878$
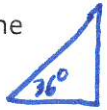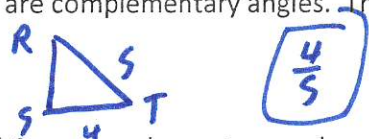
15. $\triangle LMN$ is a right triangle. One of the acute angles measures 65°. What is the cosine of the other acute angle? $\sin 65 = 0.9063$
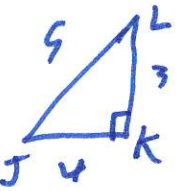
Triangles with congruent angles are similar. Trig ratios deal with ratios of sides of similar triangles.

16. In right triangle RST, R and T are complementary angles. The value of the sin R = 4/5. What is the value of cos T? $\boxed{\dfrac{4}{5}}$

17. The right triangle ABC, A and C are complementary angles. The value of the Cos A = 1/3. What is the sin C? $\boxed{\dfrac{1}{3}}$

18. In right triangle JKL, K is the right angle and tan J = ¾. Find the sin J = __3/5__   Cos J= __4/5__   sin L = __4/5__   cos L = __3/5__
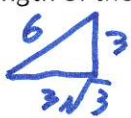
19. The shortest side of a 30-60-90 triangle measures 12. What is the measure of the longest leg? __$12\sqrt{3}$__ What is the length of the ~~longest leg~~ hypotenuse? __24__

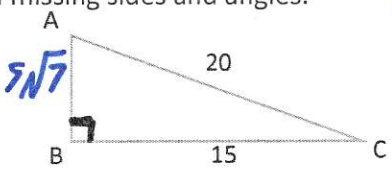20. A leg of a 45-45-90 triangle measures 7 feet. What is the measure of the hypotenuse? $7\sqrt{2}$

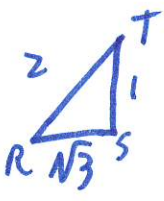21. In a 30-60-90 triangle, the hypotenuse is 6 cm. What is the length of the shortest leg? __3__ and ~~hypotenuse?~~ longest leg __$3\sqrt{3}$__

22. Solve the right triangle. Find all missing sides and angles.

AB = __$5\sqrt{7}$__   m ∠A = __48.59__
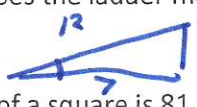
m ∠C = __41.41__

$\sin\theta = \dfrac{15}{20}$

$\cos\theta = \dfrac{15}{20}$

24. Triangle RST is a right triangle. One of the acute angles has a sin ½. What is the cosine of the same acute angle? $\boxed{\dfrac{\sqrt{3}}{2}}$
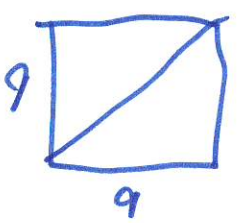
25. An 12 ft. ladder is leaning against a wall so that the base is 7 ft. from the base of the wall. What angle does the ladder make with the ground? Round to the nearest ~~foot~~ degree. $\cos\theta = \dfrac{7}{12}$ $\boxed{54}$

26. The area of a square is 81 square inches. Find the diagonal of the square.

$\boxed{9\sqrt{2}}$