

## Dynamics of Trigonometry – Extra Practice (Right Triangle Trig)

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Block: \_\_\_\_\_

**Directions:** Draw a picture with the given information. Solve the triangles and round all answers to the nearest tenth.

1.  $\triangle ABC$ ,  $\angle A = 90^\circ$ ,  $\angle B = 25^\circ$ , and  $a = 18$

2.  $\triangle PQR$ ,  $\angle P = 90^\circ$ ,  $\angle Q = 64^\circ$ , and  $p = 27$

3.  $\triangle DEF$ ,  $\angle D = 90^\circ$ ,  $\angle E = 12^\circ$ , and  $e = 9$

4.  $\triangle XYZ$ ,  $\angle X = 90^\circ$ ,  $\angle Y = 37^\circ$ , and  $z = 25$

**Directions:** Use the given information to solve for each of the following trigonometric functions. (Keep all answers as fractions).

5.  $\triangle ABC$ ,  $\angle C = 90^\circ$ ,  $a = 5$ , and  $b = 12$

a.  $\sin A =$

b.  $\cos B =$

c.  $\tan A =$

d.  $\cot B =$

e.  $\sec A =$

f.  $\csc B =$

6. Sketch  $\triangle ABC$ ,  $\angle C = 90^\circ$ . What is the relationship between:

a.  $\sin A$  and  $\cos B$

b.  $\tan A$  and  $\cot B$

c.  $\sec A$  and  $\csc B$

7. Find the measures of the angles for a 3-4-5 right triangle (Round to the nearest tenth).

8. Find the measures of the acute angles of a right triangle whose legs are 9 cm and 16 cm long (Round to the nearest tenth).

9. The legs of an isosceles right triangle are 1 unit long.

a. Find the length of the hypotenuse in simplest radical form.

b. Use part (a) to find the exact value of each of the following:

i.  $\tan 45^\circ =$

ii.  $\sin 45^\circ =$

iii.  $\cos 45^\circ =$

10. The hypotenuse of a  $30^\circ - 60^\circ - 90^\circ$  triangle is 2 units long.

a. Find the lengths of the legs in simplest radical form.

b. Use part (a) to find the exact value of each of the following:

i.  $\sin 30^\circ =$

ii.  $\sin 60^\circ =$

iii.  $\tan 30^\circ =$

iv.  $\tan 60^\circ =$

c. Convert the answers in part (b) to decimal form. Compare these with the values of  $\sin 30^\circ$ ,  $\sin 60^\circ$ ,  $\tan 30^\circ$ ,  $\tan 60^\circ$  obtained from the calculator.