

**Trigonometry: Quarter 2 Gateway Exam (5 minutes)**  
**(Original Attempt) Passing Score = 75% correct**

**Reciprocal Identities**

$$\sin(u) = \frac{1}{\csc(u)}$$

$$\cos(u) = \frac{1}{\sec(u)}$$

$$\tan(u) = \frac{1}{\cot(u)}$$

$$\csc(u) = \frac{1}{\sin(u)}$$

$$\sec(u) = \frac{1}{\cos(u)}$$

$$\cot(u) = \frac{1}{\tan(u)}$$

**Quotient Identities**

$$\tan(u) = \frac{\sin(u)}{\cos(u)}$$

$$\cot(u) = \frac{\cos(u)}{\sin(u)}$$

**Pythagorean Identities**

$$\sin^2(u) + \cos^2(u) = 1$$

$$1 + \tan^2(u) = \sec^2(u)$$

$$1 + \cot^2(u) = \csc^2(u)$$

**Sum and Difference Formulas**

$$\sin(u \pm v) =$$

$$\cos(u \pm v) =$$

$$\tan(u \pm v) =$$

$$\sin(u) \cos(v) \pm \cos(u) \sin(v)$$

$$\cos(u) \cos(v) \mp \sin(u) \sin(v)$$

$$\frac{\tan(u) \pm \tan(v)}{1 \mp \tan(u) \tan(v)}$$

**Double-Angle Formulas**

$$\sin(2u) = 2 \sin(u) \cos(u)$$

$$\cos(2u) = \cos^2(u) - \sin^2(u)$$

(OR)  $2 \cos^2(u) - 1$

(OR)  $1 - 2 \sin^2(u)$

$$\tan(2u) = \frac{2 \tan(u)}{1 - \tan^2(u)}$$

**Half-Angle Formulas**

$$\sin(u/2) = \pm \sqrt{\frac{1 - \cos(u)}{2}}$$

$$\cos(u/2) = \pm \sqrt{\frac{1 + \cos(u)}{2}}$$

$$\tan(u/2) = \frac{1 - \cos(u)}{\sin(u)}$$

(OR)  $\frac{\sin(u)}{1 + \cos(u)}$

**Power-Reducing Formulas**

$$\sin^2(u) = \frac{1 - \cos(2u)}{2}$$

$$\cos^2(u) = \frac{1 + \cos(2u)}{2}$$

$$\tan^2(u) = \frac{1 - \cos(2u)}{1 + \cos(2u)}$$

Name \_\_\_\_\_

Date \_\_\_\_\_ Pd \_\_\_\_\_

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**Reciprocal Identities**

$\sin(u) =$  \_\_\_\_\_  $\cos(u) =$  \_\_\_\_\_  $\tan(u) =$  \_\_\_\_\_

$\csc(u) =$  \_\_\_\_\_  $\sec(u) =$  \_\_\_\_\_  $\cot(u) =$  \_\_\_\_\_

**Quotient Identities**

$\tan(u) =$  \_\_\_\_\_  $\cot(u) =$  \_\_\_\_\_

**Pythagorean Identities**

\_\_\_\_\_

**Sum and Difference Formulas**

$\sin(u \pm v) =$  \_\_\_\_\_  $\cos(u \pm v) =$  \_\_\_\_\_  $\tan(u \pm v) =$  \_\_\_\_\_

\_\_\_\_\_

**Double-Angle Formulas**

$\sin(2u) =$  \_\_\_\_\_  $\cos(2u) =$  \_\_\_\_\_  $\tan(2u) =$  \_\_\_\_\_

\_\_\_\_\_

**Half-Angle Formulas**

$\sin(u/2) =$  \_\_\_\_\_  $\cos(u/2) =$  \_\_\_\_\_  $\tan(u/2) =$  \_\_\_\_\_

\_\_\_\_\_

**Power-Reducing Formulas**

$\sin^2(u) =$  \_\_\_\_\_  $\cos^2(u) =$  \_\_\_\_\_  $\tan^2(u) =$  \_\_\_\_\_

\_\_\_\_\_