

## Chapter 5 Review

Can YOU do these problems?

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### Question 1

- Use the given values to evaluate all six trig functions:

$$\tan x = \frac{5}{12}, \sec x < 0$$

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### Question 2

- Use a half-angle formula to determine the EXACT value of

$$\tan 165^\circ$$

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### Question 3

- Using a double angle formula, find the EXACT values of  $\sin 2u$  and  $\cos 2u$  given that

$$\cos u = \frac{-2}{\sqrt{5}}, \frac{\pi}{2} < u < \pi$$

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### Question 4

- Simplify down to ONE trig function or numerical value

$$\frac{-\sin\left(\frac{\pi}{2} - x\right)}{\cos\left(\frac{\pi}{2} - x\right)}$$

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### Question 5

- Write the expression as the sine, cosine, or tangent of the angle. You do not have to find the value!

$$\sin 60^\circ \cos 55^\circ - \cos 60^\circ \sin 55^\circ$$

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### Question 6

- Simplify down to ONE trig function or numerical value

$$\sin \beta \tan \beta + \cos \beta$$

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### Question 7

- Use a half-angle formula to **simplify** the expression:

$$-\sqrt{\frac{1 + \cos 10x}{2}}$$

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### Question 8

- Prove the following identities- be sure to only work ONE side of the equation!

$$\frac{\cos^2 \alpha - 4}{\cos \alpha - 2} = \cos \alpha + 2$$

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### Question 9

- **Verify** the identity using a sum or difference formula:

$$\sin\left(x - \frac{3\pi}{2}\right) = \cos x$$

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### Question 10

- **Prove** the following identities- be sure to only work **ONE** side of the equation!

$$\frac{\cos^2\left(\frac{\pi}{2} - x\right)}{\cos(-x)} = \sin x \tan x$$

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### Question 11

- Find **all** solutions to the given equation between 0 and  $2\pi$ .

$$4 \tan^2 u - 1 = \tan^2 u$$

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### Question 12

- Find **all** solutions to the given equation between 0 and  $2\pi$ .

$$4 \cos^2 \theta = 2 \cos \theta$$

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### Question 13

- Find **all** solutions to the given equation between 0 and  $2\pi$ .

$$2 \sin^2 x - 3 \sin x = -1$$

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### Question 14

- If  $u$  &  $v$  are in the same quadrant, find the EXACT value of  $\cos(u - v)$  using a sum or difference formula

$$\sin u = \frac{3}{4} \text{ and } \cos v = \frac{-5}{13}$$

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### Question 15

- Find **all** solutions to the given equation between 0 and  $2\pi$ .

$$4 \cos \theta = 1 + 2 \cos \theta$$

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