

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Suppose $\tan \alpha = -\frac{1}{2}$, where $\frac{\pi}{2} < \alpha < \pi$. Find $\sin \alpha$ and $\cos \alpha$. (Show all steps.)

2. Suppose $\cos \beta = x$, where $\frac{3\pi}{2} < \beta < 2\pi$. Find an expression for $\sin \beta$ in terms of x . (Show all steps.)

3. If α and β are the same angles as above, give an expression for $\cos(\alpha - \beta)$. (Show all steps.)