

Name _____

- No calculators allowed.
- A correct answer will only be given full credit if enough work is shown to justify that answer.

1. (3 points) Find the equation for the line which passes through the point $(9, 4)$, and is perpendicular to the line $6x + 2y = 5$.

2. (2 points) State a geometric property common to all lines in the family $y = m(x - 3) - 1$, and sketch 4 of the lines.

3. (2 points) Compute the value of $\sin\left(\frac{2\pi}{3}\right)$.

4. (1 points) If $\sin(\theta) = \frac{3}{5}$ and $0 < \theta < \frac{\pi}{2}$, find $\cos(\pi - \theta)$.

5. (2 points) Compute the value of $\cos(\alpha + \beta)$ using the figure below along with the appropriate trigonometric identity. You do not need to simplify your final answer.