

Name: KEY

**Section 3.1a – Proficiency Check – Slope-Intercept and Point-Slope Form**

Write, in Slope-Intercept Form, the equation of a line that goes through the following points

<p style="text-align: center;">(1, -3) and (4, 7)</p> $\frac{7 - (-3)}{4 - 1} = \frac{10}{3}$ <p style="text-align: center;">slope - intercept, solve for b</p> $y = mx + b$ $7 = \frac{10}{3}(4) + b$ $7 = \frac{40}{3} + b$ <p style="text-align: center;">↓</p> $\frac{21}{3} - \frac{40}{3} = b$ $-\frac{19}{3}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <math>y = \frac{10}{3}x - \frac{19}{3}</math> </div>	<p style="text-align: center;">(-4, 3) and (1, 9)</p> $\frac{9 - 3}{1 - (-4)} = \frac{6}{5}$ $y = mx + b$ $9 = \frac{6}{5}(1) + b$ $9 = \frac{6}{5} + b$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <math>y = \frac{6}{5}x + \frac{39}{5}</math> </div> $\frac{45}{5} - \frac{6}{5} = b$ $b = \frac{39}{5}$
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Write in Point-Slope Form, the equation of the line that meets the criteria listed below.

<p>Goes through: (-4, 3)</p> <p>Slope of: <math>\frac{3}{5}</math></p> $y = \frac{3}{5}x + b$ $3 = \frac{3}{5}(-4) + b$ $3 = -\frac{12}{5} + b$ $\frac{15}{5} + \frac{12}{5} = b \quad b = \frac{27}{5}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <math>y = \frac{3}{5}x + \frac{27}{5}</math> </div>	<p>Goes through: (2, -5)</p> <p>Slope of: <math>-\frac{4}{7}</math></p> $y = -\frac{4}{7}x + b$ $-5 = -\frac{4}{7}(2) + b$ $-5 = -\frac{8}{7} + b$ $-\frac{35}{7} + \frac{8}{7} = b \quad b = -\frac{27}{7}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <math>y = -\frac{4}{7}x - \frac{27}{7}</math> </div>
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