

The following questions are a sampling of math you have learned in previous grades. You will have to use these skills again to help you with your studies in Calculus. The questions meant as a diagnostic tool so that you can identify areas that you may need to refresh again. Answer as many questions as you can and show your work.

1. Find an equation of the line of the line passing through the point $(1, -7)$ with slope $-\frac{1}{2}$. Give the equation in slope intercept form, point slopt form and general form.

2. Find “x” and “y” such that the points $A(-1,3)$, $B(x, 9)$ and $C(5,y)$ are *collinear* (lie on the same line) with point B lying midway between points A and C.

3. Find the roots of the equation $7x^2 - 6x - 3 = 0$.

4. Solve: $x^2 - 6x + 8 < 0$

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5. Solve: $|2x + 1| = 4$

6. Find the points of intersection between the following two curves.

$$2x - y = -5$$

$$y = x^2 + 2$$

7. Simplify the complex fraction:

$$\frac{\frac{a+b}{a-b} + \frac{a-b}{a+b}}{\frac{a}{b} + \frac{b}{a}}$$

8. Express "x" in terms of the other variables in the diagram below:

