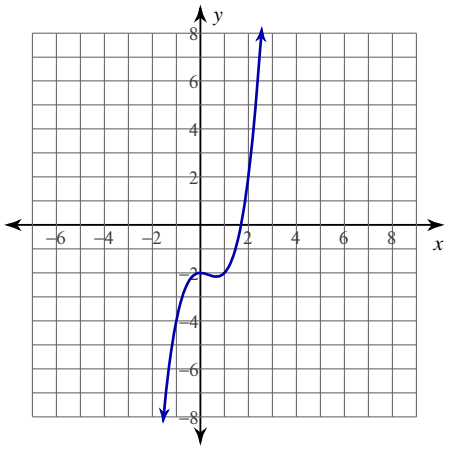
Kuta Software - Infinite Calculus Name_____

Normal Lines

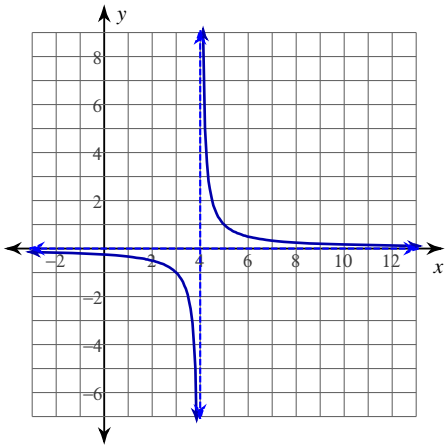
Date_____ Period____

For each problem, find the equation of the line normal to the function at the given point. If the normal line is a vertical line, indicate so. Otherwise, your answer should be in slope-intecept form.

1) $y = x^3 - x^2 - 2$ at $(1, -2)$



2) $y = \dfrac{1}{x-4}$ at $(5, 1)$



3) $y = -x^3 + 15x^2 - 72x + 110$ at $(4, -2)$

4) $y = \dfrac{2}{x-3}$ at $(5, 1)$

5) $y = \dfrac{3}{x+2}$ at $\left(4, \dfrac{1}{2}\right)$

6) $y = (2x - 8)^{\frac{1}{3}}$ at $(0, -2)$

7) $y = \ln(x + 4)$ at $(-3, 0)$

8) $y = -\sin(2x)$ at $\left(-\dfrac{\pi}{2}, 0\right)$

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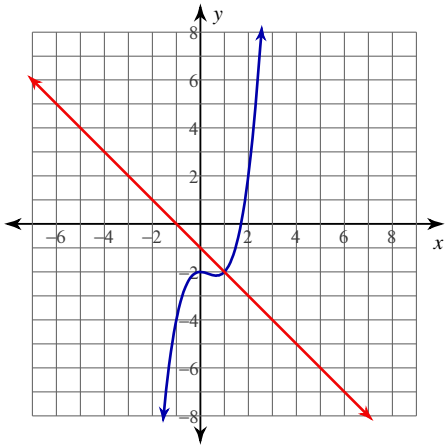
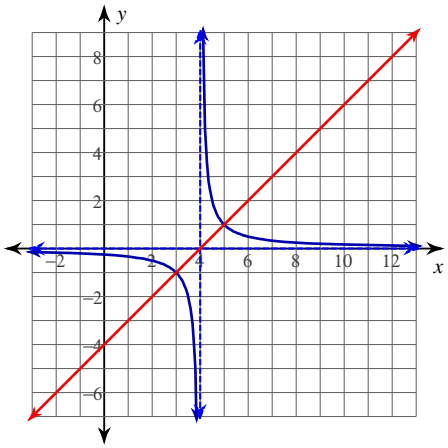
1) $y = x^3 - x^2 - 2$ at $(1, -2)$



$y = -x - 1$

2) $y = \frac{1}{x - 4}$ at $(5, 1)$



$y = x - 4$

3) $y = -x^3 + 15x^2 - 72x + 110$ at $(4, -2)$

Normal line is vertical line at $x = 4$

4) $y = \frac{2}{x - 3}$ at $(5, 1)$

$y = 2x - 9$

5) $y = \frac{3}{x + 2}$ at $\left(4, \frac{1}{2}\right)$

$y = 12x - \frac{95}{2}$

6) $y = (2x - 8)^{\frac{1}{3}}$ at $(0, -2)$

$y = -6x - 2$

7) $y = \ln(x + 4)$ at $(-3, 0)$

$y = -x - 3$

8) $y = -\sin(2x)$ at $\left(-\frac{\pi}{2}, 0\right)$

$y = -\frac{1}{2}x - \frac{\pi}{4}$