

AP CALCULUS AB

For problems 1 through 4, state the discontinuity type and the x – location of the discontinuity.

1)

$$f(x) = \frac{1}{(x+4)^2}$$

2)

$$f(x) = \cos\left(\frac{2\pi}{x-7}\right)$$

3)

$$f(x) = \begin{cases} -x^2 + 4x - 1 & , \quad -\infty < x \leq 3 \\ -x^2 + 8x - 11 & , \quad 3 < x < \infty \end{cases}$$

4)

$$f(x) = \frac{3x^2 + 14x + 8}{x+4}$$

DISCONTINUITY TYPES

5) For

$$f(x) = \frac{3x^2 - 17x + 20}{x^2 - 6x + 8}$$

- find the coordinates of the hole.
- find the horizontal and vertical asymptotes.
- graph $y = f(x)$, the hole, and the vertical and horizontal asymptotes on the grid provided.
- state the domain and range of $y = f(x)$.

