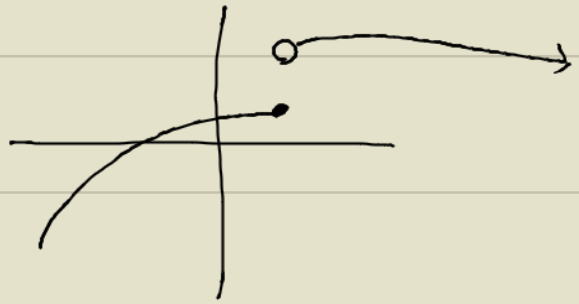

1. $f(x) = (x^3 - 2)^5$

CONT: $(-\infty, \infty)$

(YES)

TROUBLE AREAS

1. FRACTIONS
2. PIECEWISE FUNCTIONS
3. RADICALS

2. $f(x) = \frac{8}{x^2-1}$

FRACTIONS

TO FIND WHERE IT IS DISCONTINUOUS SET DENOM. EQUAL TO ZERO AND SOLVE

$x^2 - 1 = 0$

(DOTS) $(x+1)(x-1) = 0$

$x+1=0 \quad x-1=0$

DISC.: $x = -1 \quad x = 1$ (NO)

3. $f(x) = \frac{2x}{x^2+5}$

$x^2 + 5 = 0$

$x^2 = -5$

$x = \pm\sqrt{-5}$

~~$x = \pm i\sqrt{5}$~~

CONT: $(-\infty, \infty)$

(YES)

4. $f(x) = \frac{5}{x^2-9}$

$x^2 - 9 = 0$

(DOTS) $(x+3)(x-3) = 0$

$x+3=0 \quad x-3=0$

(DISC: $x = -3 \quad x = 3$)

CONT: $x \neq -3 \quad x \neq 3$

$(-\infty, -3) \cup (-3, 3) \cup (3, \infty)$