

Excluded values in the Domain CW

1) $f(x) = \frac{5}{x^2+6x+9} = \frac{5}{(x+3)(x+3)}$ or $\frac{5}{(x+3)^2}$; $x \neq -3$

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

2) $f(x) = \frac{1}{x^2+3x-10}$ $\frac{-10}{-2, 5} \xrightarrow{\text{only when } a=1!!}$ $\frac{1}{(x-2)(x+5)}$ $x \neq 2, -5$

D: $(-\infty, -5) \cup (-5, 2) \cup (2, \infty)$

3) $f(x) = 6x^2 - 7x - 3$
 $\quad \quad \quad \wedge$
 $6x^2 - 9x + 2x - 3$

$\underline{3x(2x-3)} \quad \underline{1(2x-3)}$ \smile

$(2x-3)(3x+1)$

$2x-3=0 \quad 3x+1=0$
 $2x=3 \quad 3x=-1$
 $x=3/2 \quad x=-1/3$

D: $(-\infty, -1/3) \cup (-1/3, 3/2) \cup (3/2, \infty)$

- 1) Determine A, B, C 1) $A=6$
 $B=-7$
 $C=-3$
- 2) multiply A·C and find factors whose sum is B 2) $\frac{-18}{-9, 2}$
- 3) rewrite quadratic and split the b term
- 4) "Group" the first two terms and the last two terms and factor out GCF.

5) "inside" terms become first binomial
 outside terms form 2nd binomial

4) $f(x) = 15x^2 - 14x - 8$
 $\quad \quad \quad \wedge$
 $15x^2 - 20x + 6x - 8$

$5x(3x-4) \quad 2(3x-4)$
 $(3x-4)(5x+2)$

$\frac{-120}{-2/5, 4/3}$ \wedge $\frac{-1, 120}{-2, 60}$
 $-20 \quad 6$ $-3 \quad 40$
 $-4 \quad 30$
 $-5 \quad 24$
 $-6 \quad 20$

D: $(-\infty, -2/5) \cup (-2/5, 4/3) \cup (4/3, \infty)$

Homework

$$1) f(x) = 12x^2 + 11x + 2$$

$$2) f(x) = 5x^2 - 19x + 12$$