

October 12, 2012

Section 6.6 6.5

$$\textcircled{15} \frac{x^2 - 23}{(2x+1)(x-3)} + \frac{2}{x-3} = \frac{-1}{2x+1}$$

$$\text{LCD} = (2x+1)(x-3)$$

$$x^2 - 23 + 2(2x+1) = -1(x-3)$$

$$x^2 - 23 + 4x + 2 = -x + 3$$

$$x^2 + 4x - 21 = -x + 3$$

$$+x - 3 \quad +x - 3$$

$$x^2 + 5x - 24 = 0$$

$$(x+8)(x-3) = 0$$

$$\boxed{x+8=0} \quad \checkmark \quad \parallel \quad \boxed{x=-8}$$

$$\boxed{x-3=0} \quad \times \quad \parallel \quad \boxed{x=3}$$

The answer is $\boxed{x=-8}$

$$2x+1 \neq 0$$

$$2x \neq -1$$

$$\boxed{x \neq -\frac{1}{2}}$$

$$x-3 \neq 0$$

$$\boxed{x=3}$$

$$\textcircled{45} \frac{28}{x^2-9} + \frac{2x}{x-3} + \frac{6}{x+3} = 0$$

$$(x+3)(x-3)$$

$$28 + 2x(x+3) + 6(x-3) = 0$$

$$28 + 2x^2 + 6x + 6x - 18 = 0$$

$$2x^2 + 12x + 10 = 0$$

$$2(x+5)(x+1) = 0$$

$\frac{2 \neq 0}{\text{never}}$

$$x+5=0 \quad \checkmark \quad \parallel \quad \boxed{x=-5}$$

$$x+1=0 \quad \checkmark \quad \parallel \quad \boxed{x=-1}$$

$$\text{LCD} = (x+3)(x-3)$$

$$x+3=0$$

$$\boxed{x=-3}$$

$$x-3=0$$

$$\boxed{x=3}$$

The answer is:

$$x=-5 \quad x=-1$$

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⑨ Lab

$$\frac{1}{x-5} - \frac{5}{x^2-5x} = 1 \quad \text{LCD} = x(x-5)$$

$$\boxed{x \neq 0}$$

$$x-5=0$$

$$\boxed{x=5}$$

$$1(x) - 5 = 1 \cdot x(x-5)$$

$$x-5 = x^2 - 5x$$

$$0 = x^2 - 5x - x + 5$$

$$0 = x^2 - 6x + 5$$

$$0 = (x-5)(x-1)$$

$$x-5=0$$

$$x-1=0$$

$$\boxed{x=5} \quad \times$$

$$\boxed{x=1} \quad \checkmark$$

The answer is $x=1$

Lab 6.1 ⑫

$$\frac{2x}{9} \cdot \frac{9x+18}{10x+20}$$

$$\frac{\cancel{2x}}{\cancel{9}} \cdot \frac{\cancel{9}(x+2)}{\cancel{10} \cdot 2(x+2)} = \frac{x}{5}$$