

R2.1

$$2x + 4 = 16$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$x = 6$$

$$x = 3 ?$$

No

$$x = 6 ?$$

Yes

P R16 17-34

$$25. \quad 6[x - (2x+3)] = 8-5x$$

$$6[-x - 3] = 8-5x$$

$$-6x - 18 = 8 - 5x$$

$$-26 = x$$

$$26. \quad 8(x+2) - 3(2x+1) = 2(x+5)$$

$$8x+16 - 6x-3 = 2x+10$$

$$2x+13 \neq 2x+10$$

$$13 \neq 10$$

No Solution $0 \neq -3$

$$2x+13 = 2x+13$$

$$0 = 0 \quad \text{True}$$

All Reals

$$27. \quad \frac{5x}{4} + \frac{1}{2} = x - \frac{1}{2}$$

$$4 \cdot \frac{1}{4} x = -1 \cdot 4 \quad 4 \cdot \frac{5x}{4} + \frac{4 \cdot 2}{4} = 4 \cdot \frac{4x}{4} - \frac{4 \cdot 2}{4}$$

$$x = -4 \quad + \frac{2}{4} \quad + \frac{2}{4}$$

$$\frac{5x}{4} + 1 = \frac{4x}{4}$$

$$-\frac{5x}{4} \quad -\frac{5x}{4}$$

$$-4 \cdot 1 = -\frac{x}{4} \cdot -4$$

$$-4 = x$$

$$\frac{1}{4}x$$

$$-\frac{x}{4}$$

$$\frac{1}{4}x$$

p R11

$$\frac{100-4u}{3} = \frac{5u+6}{4} + \frac{6}{7}$$

$$\frac{400-16u}{12} = \frac{15u+18}{12} + \frac{72}{12}$$

$$\frac{12}{1} \cdot \frac{400-16u}{\cancel{12}} = \frac{15u+90}{\cancel{12}} \cdot \frac{\cancel{12}}{1}$$

$$\begin{array}{r} 400 - 16u = 15u + 90 \\ \color{blue}{-90} \quad \color{red}{+16u} \quad \color{red}{+16u} \quad \color{blue}{-90} \end{array}$$

$$\frac{310}{31} = \frac{31u}{31}$$

$$10 = u$$

$$38. \frac{10x+3}{5x+6} \neq \frac{1}{2}$$

$$20x + 6^6 = 5x + 6^6$$

$$\frac{15x}{15} = \frac{0}{15}$$

$$x = 0$$

$$42. \frac{1}{x-2} + \frac{3}{x+3} = \frac{4}{x^2+x-6}$$

$$\frac{x+3}{(x-2)(x+3)} + \frac{3(x-2)}{(x-2)(x+3)} = \frac{4}{(x-2)(x+3)}$$

$$\frac{\cancel{(x-2)(x+3)} x+3}{\cancel{(x-2)(x+3)}} + \frac{\cancel{(x-2)(x+3)} 3x-6}{\cancel{(x-2)(x+3)}} = \frac{\cancel{(x-2)(x+3)} 4}{\cancel{(x-2)(x+3)}}$$

$$x+3 + 3x-6 = 4$$

$$4x-3 = 4^{+3}$$

$$4x = 7$$

$$x = \frac{7}{4}$$

$$43. \frac{x}{x+4} + \frac{4}{x+4} + 2 = 0$$

$$\frac{x+4}{x+4} + 2 = 0$$

$$1 + 2 = 0$$

$$3 \neq 0$$

7/6

$$\frac{4}{u-1} + \frac{6}{3u+1} = \frac{15}{3u+1}$$

$$-\frac{6}{3u+1} \quad -\frac{6}{3u+1}$$

$$\frac{4}{u-1} = \frac{9}{3u+1}$$

$$\frac{4(3u+1)}{(u-1)(3u+1)} = \frac{9(u-1)}{(u-1)(3u+1)}$$

$$\frac{12u+4}{(u-1)(3u+1)} = \frac{9u-9}{(u-1)(3u+1)}$$

$$12u+4 = 9u-9$$

$$-9u \quad -9u$$

$$3u = -13$$

$$\frac{3u}{3} = \frac{-13}{3}$$

$$u = -\frac{13}{3}$$

$$49. (x+2)^2 + 5 = (x+3)^3$$

$$(x+2)(x+2) + 5 = (x+3)(x+3)$$

$$x^2 + 4x + 4 + 5 = x^2 + 6x + 9$$

$$\overset{x^2}{x^2} + 4x + 9 = \overset{-x^2}{x^2} + 6x + 9$$

$$\overset{-4x}{4x} + \overset{-9}{9} = \overset{-6x}{6x} + \overset{-9}{9}$$

$$0 = \frac{2x}{2}$$

$$0 = x$$