

$$\frac{(x-2)(x+2)}{3} - \frac{3(x-2)}{5} = \frac{(x-1)^2}{3} - \frac{4}{15}$$

$$\frac{x^2 - 4}{3} - \frac{3x - 6}{5} = \frac{x^2 - 2x + 1}{3} - \frac{4}{15}$$

$$x=3$$

$$\frac{\cancel{5x^2} - 20 - 9x + 18}{\cancel{15}} = \frac{\cancel{5x^2} - 10x + 5 - 4}{\cancel{15}}$$

$$-9x + 10x = +20 - 18 + 5 - 4$$

$$x = 3$$

$$\frac{(x+3)(x-3)}{2} - \frac{2(x-1)}{7} = \frac{9}{14} + \frac{(x-2)^2}{2}$$

$$\frac{x^2-9}{2} - \frac{2x-2}{7} = \frac{9}{14} + \frac{x^2-4x+4}{2}$$

$$\frac{\cancel{7x^2}-63-4x+4}{14} = \frac{9+\cancel{7x^2}-28x+28}{14}$$

$$-4x+28x = 9+28+63-4$$

$$24x = 96$$

$$x = \frac{96}{24} = 4$$

$$\frac{(x+3)(x-3)}{2} - \frac{2(x-1)}{7} = \frac{9}{14} + \frac{(x-2)^2}{2}$$

$$\frac{(4+3)(4-3)}{2} - \frac{2(4-1)}{7} = \frac{9}{14} + \frac{(4-2)^2}{2}$$

$$\frac{7}{2} - \frac{6}{7} = \frac{9}{14} + \frac{4}{2}$$

$$\frac{49-12}{14} = \frac{9+28}{14}$$

$$37 = 37$$

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$$\frac{(x+4)^2}{2} - \frac{x(x+3)}{2} + \frac{3(x-2)}{4} = -3 - \frac{1}{4} \quad x = -3$$

$$\frac{x^2 + 8x + 16}{2} - \frac{x^2 + 3x}{2} + \frac{3x - 6}{4} = -\frac{3}{1} - \frac{1}{4}$$

$$\frac{\cancel{2x^2} + 16x + 32 - \cancel{2x^2} - 6x + 3x - 6}{4} = \frac{-12 - 1}{4}$$

$$+16x - 6x + 3x = -12 - 32 + 6 - 1$$

$$13x = -39$$

$$x = -\frac{39}{13} = -3$$

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$$\frac{1}{12} - \frac{(x-3)^2}{4} + \frac{2(x-3)}{3} = \frac{1}{2} - \frac{x(x-6)}{4}$$

$$x = 7$$

$$\frac{1}{12} - \frac{x^2 - 6x + 9}{4} + \frac{2x - 6}{3} = \frac{1}{2} - \frac{x^2 - 6x}{4}$$

$$\frac{1 - 3x^2 + 18x - 27 + 8x - 24}{12} = \frac{6 - 3x^2 + 18x}{12}$$

$$+ 8x = 6 + 27 + 24 - 1 \quad + 8x = 56 \quad x = \frac{56}{8} = 7$$