

Unit 3 - Equations

Solving Equations with Fractions and Decimals Section 7.6 Pg. 359-361	Equations with Decimals, With Fractions, Using Brackets Classwork p. 361: 1, 3, 19, 22, 25, 27, 29, 31, 35, 38 Homework p. 361: 17, 18, 20, 21, 23, 24, 26, 28, 30, 32, 33, 34, 36, 37, 41
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Notes: • **DO NOT FEAR DECIMALS or FRACTIONS** - COMMON DENOMINATOR WILL COME TO THE RESCUE TODAY
• WE CONTINUE TO USE SAME IDEAS $\Rightarrow$ INVERSE OPERATIONS

Classwork Pg. 361

Solve.

$$1. \quad x + 0.2 = 0.8$$

$$\begin{aligned} x &= 0.8 - 0.2 \\ &= 0.6 \end{aligned}$$

$$3. \quad s + 1.2 = 1.5$$

$$\begin{aligned} s &= 1.5 - 1.2 \\ &= 0.3 \end{aligned}$$

We can eliminate the fractions by multiplying both sides by a common denominator

CD: 4

$$19. \quad \frac{x}{4} = \frac{1}{2}$$

$$4 \left(\frac{x}{4} \right) = 4 \left(\frac{1}{2} \right)$$

$$x = 2$$

CD: 6

$$22. \quad \frac{m}{6} = -\frac{1}{3}$$

$$\begin{aligned} 6 \left(\frac{m}{6} \right) &= 6 \left(-\frac{1}{3} \right) \\ \frac{6m}{6} &= -\frac{6}{3} \\ m &= -2 \end{aligned}$$

Solve and check.

25. $\frac{y}{2} = \frac{y}{3} - 1$

CD: 6

Distributive Property

$$\frac{6}{1} \left(\frac{y}{2} \right) = \frac{6}{1} \left(\frac{y}{3} - 1 \right)$$

$$3y = \frac{6y}{3} - 6$$

$$3y = 2y - 6$$

$$y = -6$$

Check

LHS

$$\frac{y}{2} = \frac{-6}{2} = -3$$

RHS

$$\frac{y}{3} - 1 = \frac{-6}{3} - 1 = -2 - 1 = -3$$

27. $\frac{5n}{2} = \frac{4n}{3} - \frac{7}{6}$

CD: 6

$$6 \left(\frac{5n}{2} \right) = 6 \left(\frac{4n}{3} - \frac{7}{6} \right)$$

$$15n = \frac{24n}{3} - \frac{42}{6}$$

$$15n = 8n - 7$$

$$7n = -7$$

$$n = -1$$

Check

LHS

$$\frac{5n}{2}$$

$$\frac{5(-1)}{2}$$

$$= -\frac{5}{2}$$

$$= -2.5$$

RHS

$$\frac{4n}{3} - \frac{7}{6}$$

$$\frac{4(-1)}{3} - \frac{7}{6}$$

$$= -\frac{4}{3} - \frac{7}{6}$$

$$= -\frac{8}{6} - \frac{7}{6}$$

$$= -\frac{15}{6}$$

$$= -2.5$$

31. $\frac{(3-y)}{5} = \frac{(-2-3y)}{4}$

CD: 20

$$20 \left(\frac{3-y}{5} \right) = 20 \left(\frac{-2-3y}{4} \right)$$

$$4(3-y) = 5(-2-3y)$$

$$12 - 4y = -10 - 15y$$

$$\frac{11y}{11} = \frac{-22}{11}$$

$$y = -2$$

29. $\frac{n}{3} + 2 = \frac{n}{5} + 4$

Check

CD: 15

$$15 \left(\frac{n}{3} + 2 \right) = 15 \left(\frac{n}{5} + 4 \right)$$

LHS

$$\frac{n}{3} + 2$$

$$\frac{15}{3} + 2$$

$$= 5 + 2$$

$$= 7$$

RHS

$$\frac{n}{5} + 4$$

$$\frac{15}{5} + 4$$

$$= 3 + 4$$

$$= 7$$

$$\Rightarrow 5n + 30 = 3n + 60$$

$$\Rightarrow 5n - 3n = 60 - 30$$

$$\frac{2n}{2} = \frac{30}{2}$$

$$n = 15$$

Solve.

35. $\frac{n+5}{2} - \frac{n}{3} = 1$

CD: 6

$$\frac{6}{1} \left(\frac{n+5}{2} - \frac{n}{3} \right) = \frac{6}{1} (1)$$

$$\frac{6(n+5)}{2} - \frac{6n}{3} = 6$$

$$3(n+5) - 2n = 6$$

$$3n + 15 - 2n = 6$$

$$n = 6 - 15$$

$$= -9$$

38. $\frac{1-x}{4} - \frac{x}{2} = 7$

CD: 4

$$4 \left(\frac{1-x}{4} - \frac{x}{2} \right) = 4(7)$$

$$\frac{4(1-x)}{4} - \frac{4x}{2} = 28$$

$$1(1-x) - 2x = 28$$

$$-x - 2x = 28 - 1$$

$$-3x = 27$$

$$x = -9$$