Linear Equations

Revision

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(i) $x + (x+2) = 68$

$2x + 2 = 68$

$2x = 68 - 2$

$2x = 66$

$x = \frac{66}{2} = 33$

(ii) $2x - \frac{3}{2} = 5x + \frac{3}{4}$

$2x - 5x = \frac{3}{4} + \frac{3}{2}$

$\frac{-3x}{-3} = \frac{9}{4} \div -3$

$x = \frac{-3}{4}$

3

$\frac{9}{4} \div -3$

$\frac{9}{4} \times \frac{1}{-3}$

$= \frac{3}{4} \times \frac{1}{-1}$

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iii) $\frac{x}{2} - 4 = \frac{x}{3} - 1$ ... (2)

$3x - 12$

$\frac{x}{2} \times 6 - 4 \times 6 = \frac{x}{3} \times 6 - 1 \times 6$

$3x - 24 = 2x - 6$

$3x - 2x = -6 + 24$

$\boxed{x = 18}$

$\frac{x}{2} - \frac{x}{3} = -1 + 4$

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

$\frac{x}{6} = 3$

$x = 3 \times 6$

$\boxed{x = 18}$

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

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

$3x + 6 = 2x - 4$

$3x - 2x = -4 - 6$

$\boxed{x = -10}$

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$$\left(\frac{x}{6} + \frac{x}{4} = \frac{x}{2} + \frac{x}{4}\right) \times 12$$

$$\frac{x}{6} \times 12 + \frac{x}{4} \times 12 = \frac{x}{2} \times 12 + \frac{x}{4} \times 12$$

$$2x + 3x = 6x + 3x + 0$$

$$2x + 3x - 6x - 3x = 0$$

$$2x - 6x = 0$$

$$\frac{-4x}{-4} = \frac{0}{-4}$$

$$x = \frac{0}{-4} = 0$$

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$$2x + \frac{5}{3} = \frac{1}{4}x + 4$$

$$\frac{2x}{1} - \frac{1 \times x}{4} = \frac{4x - 5}{(1)\ (3)}$$

$$\frac{2x}{1} - \frac{x}{4} = \frac{12 - 5}{3}$$

$$\frac{8x - x}{4} = \frac{7}{3}$$

$$\frac{7x}{4} = \frac{7}{3}$$

$$\frac{x}{4} = \frac{1}{3}$$

$$3x = 4$$

$$x = \frac{4}{3}$$

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

$$\frac{3}{\cancel{12}}$$

$$\frac{19}{12} - \frac{3}{4}$$

$$\frac{19 \times 4 - 3 \times 12}{12 \times 4}$$

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(i) $\frac{x}{2} - \frac{x}{3} = 5$

(ii) $\frac{x-2}{3} = \frac{2x-1}{3} - 1$

} find x

$\frac{3x(x-2)}{3} = \frac{3\times(2x-1)}{3} - \frac{3\times(2)}{3}$

(iii) $2(2n+5) = 3(3n-10)$ } find n

$\times \frac{3}{3} \quad \frac{(x-2)}{}$

$4n + 10 = 9n - 30$

$-5n = -40$

$n = \frac{-40}{-5} = 8$

$fx = f2$

$x = 2$

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Q. Two supplementary angles differ by 40°. What would be the measure of larger angle?

Sol: Let the larger angle be x.

The other (smaller) angle will be $(180^\circ - x)$

As per the conditions given in the problem.

$$x - (180^\circ - x) = 40^\circ$$

~~Complementary~~ angles.

⇒

~~Sup~~

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Q. Two complementary angles differ by 20°. Find the smaller angle.

$$x - (90 + x) = 20$$

$$-2x = 110^\circ$$

$$x = \frac{110^\circ}{2} = 55^\circ$$

Smaller angle $= 90^\circ - x^\circ$

$= 90^\circ - 55^\circ$

$= 35^\circ$

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Q. If the sum of a number and its two-fifth is 70, find the number.

Q. The length of a rectangle is three times its width and its perimeter is 56 m. Find the length.

Q. Twice a number when increased by 7 gives 25. Find the number.

Q. The sum of two consecutive odd numbers is 36. Find the larger ~~no.~~ number.

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