Curriculum Outcomes:

PR1: . Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.

PR3. Model and solve problems using linear equations of the form:

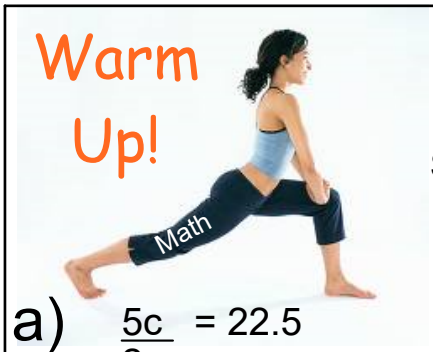
***ax* = *b;* = b , a ≠ 0; *ax* + *b* = *c*; +*b* = *c*, a ≠ 0; = *b*, *x* ≠ 0 ax ax xa**

***ax*+ *b* = *cx* + *d; a(bx* + *c)* = *d(ex* + *f); a(x* + *b)* = *c; ax* = b+*cx* concretely, pictorially and symbolically, where *a, b, c, d, e, and f* are rational numbers

Student Friendly:

"Solving equations using inverse operations"

Feb 6-7:53 AM



Solve for x using inverse operations

a) $\frac{5c}{2} = 22.5$

b) $5x + 4 = 29$

c) $5 - 3x = 7$

d) $3(2x-1) = -5$

Feb 23-6:17 PM

Warm Up!

Solve for x using inverse operations

a) $\frac{5c}{2} = 22.5$

$\frac{5c}{2}^{(2)} = 22.5^{(2)}$

$\frac{5c}{5} = \frac{45}{5}$

$c = 9$ ✓

Verify

$\frac{5c}{2}$ 22.5

$\frac{5(9)}{2}$

$\frac{45}{2}$

22.5

b) $5x + 4 = 29$

$5x + 4 = 29$ -4 -4

$\frac{5x}{5} = \frac{25}{5}$

$x = 5$

Verify

$5x + 4$ 29

$5(5) + 4$

$25 + 4$

29

c) $5 - 3x = 7$

c) $5 - 3x = 7$ -5 -5

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

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

Verify

$5 - 3(x)$ 7

$5 - 3\left(-\frac{2}{3}\right)$

$5 - (-2)$

$5 + 2$

7

Feb 14-8:50 AM

d) $3(2x-1)= -5$

$6x - 3 = -5$ (+3 to both sides)

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

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

Verify

$6x - 3 \quad -5$

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

$-2 - 3$

-5

Three Step Equations

Solve

$$\frac{3x - 1}{2} = 7$$

$$\frac{3x}{2} - \frac{1}{2} = 7 \quad \times(2) \quad \times(2) \quad \times(2)$$

$$3x - 1 = 14 \quad +1 \quad +1$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

If you want to verify

Check work

$$\frac{3x - 1}{2} = 7$$

LHS: RHS:

$$\frac{3(5) - 1}{2} \qquad 7$$

$$\frac{15 - 1}{2}$$

$$\frac{14}{2}$$

$$7$$

Feb 28-7:56 AM

You Try

$$\frac{2x - 4}{3} = 8$$

Solve

$$\frac{2x - 4}{3} = 8$$

$$\frac{2x}{3} \times (3) - \frac{4}{3} \times (3) = 8 \, (3)$$

$$2x - 4 = 24 \quad +4 \quad +4$$

$$\frac{2x}{2} = \frac{28}{2}$$

$$x = 14$$

If you want to verify

Check work

$$\frac{2x - 4}{3} = 8$$

LHS: RHS:

$$\frac{2(14) - 4}{3} \qquad 8$$

$$\frac{28 - 4}{3}$$

$$\frac{24}{3}$$

$$8$$

Feb 6-9:04 AM

You Try

Hint: Get rid of the fraction first!

Solve

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

x(3) x(3) x(3)

$$15x + 2 = 3$$

-2 -2

$$15x = 1$$

$\frac{}{15}$ $\frac{}{15}$

$$x = \frac{1}{15}$$

If you want to verify

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

LHS:

$5x + \frac{2}{3}$

$5\left(\frac{1}{15}\right) + \frac{2}{3}$

$\frac{5}{15} + \frac{2}{3}$

$\frac{5}{15} + \frac{10}{15}$

$\frac{15}{15}$

1

RHS:

1

You Try

Hint: Get rid of the fraction first!

$$2x + \frac{2}{5} = 7 \quad \begin{matrix} \times 5 & \times 5 & \times 5 \end{matrix}$$

$$10x + 2 = 35 \quad \begin{matrix} & & -2 & -2 \end{matrix}$$

$$\frac{10x}{10} = \frac{33}{10}$$

$$x = \frac{33}{10}$$

Feb 10-3:39 PM

If you want to verify

RHS:

$$2x + \frac{2}{5}$$

$$\frac{2(33)}{10} + \frac{2}{5}$$

$$\frac{66}{10} + \frac{2}{5}$$

$$\frac{66}{10} + \frac{4}{10}$$

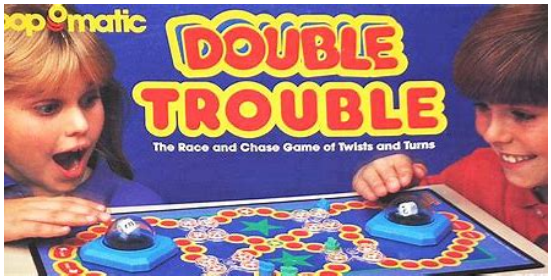
$$\frac{70}{10}$$

$$7$$

LHS:

$$= 7$$

Two Denominators



Two Denominators

$\times(6)$ $\times(6)$ $\times(6)$

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

$$\frac{6x}{2} + \frac{6}{3} = 30$$

$$3x + 2 = 30$$

$$3x = 28$$

$$\frac{3x}{3} = \frac{28}{3}$$

$$x = \frac{28}{3}$$

You Try

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

$\times(15)$ $\times(15)$ $\times(15)$

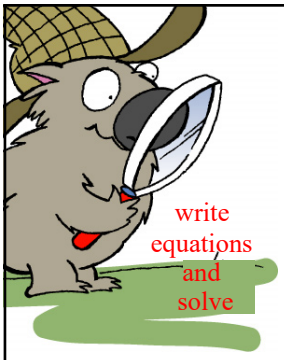
$\frac{30x}{5} + \frac{15}{3} = -15$

$$6x + 5 = -15$$

-5 -5

$$\frac{6x}{6} = \frac{-20}{6}$$

$$x = -\frac{10}{3}$$



Equations to Model and Solve a Problem

Find the height and width of a box if given the Area is $52cm^2$ and the volume is $187.2\ cm^3$ length is 8cm

Area = l x w

$\frac{52}{8} = \frac{(8)\,x\,w}{8}$

6.5 = w

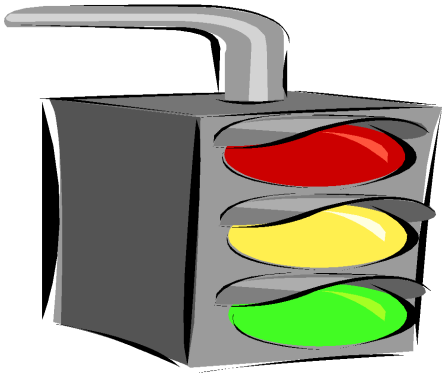
Volume = l x w x h

187.2 = 8 x 6.5 x h

187.2 = 52 x h

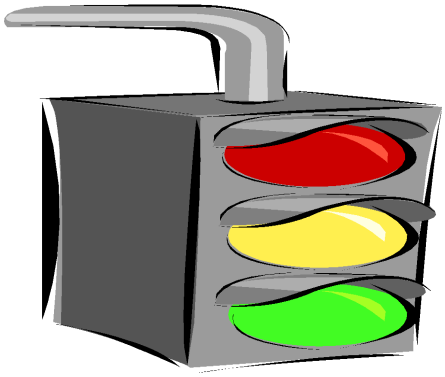
$\frac{187.2}{52} = \frac{52\,h}{52}$

3.61= h



Now it is time for Home Learning

Oct 27-10:41 PM



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QUESTIONS 24

Quiz Review

Worksheets

Oct 27-10:41 PM

Attachments

Solving Equations (6.1 Review) .pdf