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 for an unknown variable using opposite operations"

Warm Up

1) $2x - 5 = 17$

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

3) Write an equations and solve:

a) 3 times a number plus 7 is 18.4

b) half a number, add to 4 is 17

Warm Up

1) $2x - 5 = 17$ (+5)

$\frac{2x}{2} = \frac{22}{2}$

$x = 11$

2) $\frac{x}{3} - 7 = -2$ (+7)

$\frac{x}{3} = 5$ (×3)

$x = 15$

3) Write an equations and solve:

a) 3 times a number plus 7 is 18.4

$3x + 7 = 18.4$ (−7)

$\frac{3x}{3} = \frac{11.4}{3}$

$x = 3.8$

b) half a number, add to 4 is 17

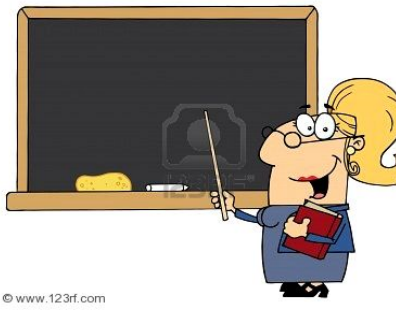
$4 + \frac{x}{2} = 17$ (−4)

$\frac{x}{2} = 13$ (×2)

$x = 26$

Any Questions???

Last Nights Homework



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8, 9ab, 10abcd, 11,13

11, 13,

Lets try some more:

$-7e + 6 = 50$ -6

$\frac{-7e}{-7} = \frac{44}{-7}$

$e = \frac{44}{-7}$

cw:

$-7\left(\frac{44}{-7}\right) + 6$

Lets try some more:

$-18 - 4x = 12 \Rightarrow -4x - 18 = 12$

$$\frac{x}{2} + 3^{-3} = 7^{-3}$$

$$\frac{x^{(2)}}{2} = 4^{(2)}$$

$$x = 8$$

$$\frac{x^{(2)}}{2} + 3^{(2)} = 7^{(2)}$$

$$x + 6^{-6} = 14^{-6}$$

$$x = 8$$

Hard

Solve

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

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

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

$\frac{5x}{5} = \frac{1}{3} \div 5$

$x = \frac{1}{3} \times \frac{1}{5}$

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

Easy

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

$15x + 2^{-2} = 3^{-2}$

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

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

$$\boxed{x}^{(3)} + \frac{2}{3}^{(3)} = 8^{(3)}$$

$$\boxed{3x} + 2^{-2} = 24^{-2}$$

$$\frac{3x}{3} = \frac{22}{3}$$

$$\boxed{x = \frac{22}{3}}$$

$$x = 7\ \tfrac{1}{3}$$

$$2x^{(5)} + \frac{2}{5}^{(5)} = 7^{(5)}$$

$$\boxed{10x} + 2^{-2} = 35^{-2}$$

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

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

$$x = 3.3$$

$$\frac{x}{2}^{(6)} + \frac{1}{3}^{(6)} = 5\,(6)$$

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

$$\boxed{3x} + 2^{-2} = 30^{-2}$$

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

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

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

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

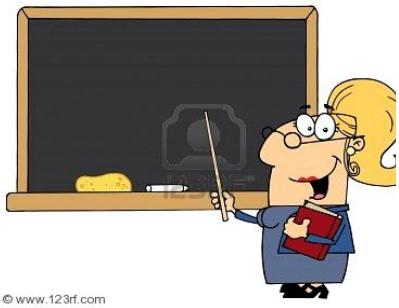
$$\boxed{6x} + 5^{-5} = -15^{-5}$$

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

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

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

Class Work
and
Finish for Homework



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Questions

12, 16, 18(ace), 24 (ac)

BOOKS NEVER WRITTEN

The Break-in by

10	−13	−7	−7	−25	8	72	6	5	−4

Origin of Man by

−1	−11	−2	72	17	−6	25	17	12

Making Soap by

−9	25	−13	72	−8	25	−2	12	−6

(O) $4y - 9 = 15$	(K) $11r + 60 = 16$
(A) $6x + 7 = -5$	(U) $y - 24 = -7$
(S) $-9t + 2 = 56$	(J) $23 - x = 13$
(P) $-69 = 7v - 6$	(V) $-67 = 6x - 1$
(Y) $35 = -2x - 15$	(M) $-4e - 9 = 19$
(I) $4 - 3n = 43$	(D) $-8 = 32 - 5q$
(N) $12 - 5u = -48$	(H) $6 + 10k = 256$
(C) $-27 + 20w = 73$	(T) $-100 = 12t - 4$
(E) $13 = 5 - 8m$	(L) $36 - x = -36$

Answers 1–8:

HI	$2\frac{1}{5}$
GA	-34
NT	-75
SC	-36
HE	12
IN	-14
WO	$-1\frac{2}{3}$
CK	$-1\frac{3}{4}$
LL	$-2\frac{1}{2}$
WA	56
GT	-55

Solve each equation below. Find your solution in the adjacent answer column and notice the two letters next to it. Print these letters in the two boxes at the bottom of the page that contain the number of that exercise.

1. $\frac{1}{3}x + 5 = 9$
2. $\frac{1}{8}a - 6 = 1$
3. $\frac{x}{4} + 7 = -2$
4. $5y - 4 = 7$
5. $9 - 4m = 19$
6. $\frac{x}{7} - 8 = -10$
7. $1 - \frac{n}{5} = 12$
8. $6t + 3 = -7$
9. $15 = -15 - 8u$
10. $0 = \frac{1}{6}y + 8$
11. $11 - \frac{1}{10}x = 10$
12. $50 = 8 + \frac{a}{2}$
13. $-10b - 7 = 9$
14. $18 = -\frac{w}{32} + 20$
15. $\frac{x}{99} + 99 = 99$
16. $-10 = 9k - 40$

Answers 9–16:

30	SB
10	SW
64	NE
$-2\frac{1}{8}$	SP
-48	RD
84	IT
$3\frac{1}{3}$	NE
$-3\frac{3}{4}$	BI
0	CO
$-2\frac{4}{5}$	OI
$-1\frac{3}{5}$	HO