

Curriculum Outcome

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:

$$ax = b; = b, a \neq 0; ax + b = c; +b = c, a \neq 0; = b, x \neq 0$$

$$ax + b = cx + d; a(bx + c) = d(ex + f); a(x + b) = c; ax = b + cx$$

concretely, pictorially and symbolically, where $a, b, c, d, e,$ and f are rational numbers

EXTENSION to unit: Solving equations with fraction in them

Student Friendly: "Rearranging an equation to get all the variables by themselves". Taking care of a fraction.

Class/Homework



Class work and homework

Mid-Unit Review

page 286

Questions: 3,4,5, 7, 8,

Yesterday

Worksheet questions

1, 5, 13, 17, 19, 21, 23, 25, 27

Today

Worksheet 1

4, 8, 12, 16, 24, 28, 30, 32, 34

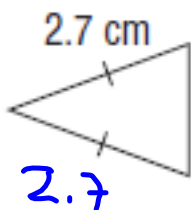
Worksheet 2

19, 20, 21, 22, 23, 24

3. Sheila is charged a fare of \$27.70 for a cab ride to her friend's house. The fare is calculated using a flat fee of \$2.50, plus \$1.20 per kilometre. What distance did Sheila travel?
- a) Let k kilometres represent the distance travelled. Write an equation to solve the problem. Solve the problem.
- b) Verify the solution.

$$27.70 = 2.50 + 1.20k$$

4. An isosceles triangle has two equal sides of length 2.7 cm and perimeter 7.3 cm.



$$P = s + s + x$$
$$7.3 = 2.7 + 2.7 + x$$
$$7.3 = 5.4 + x$$

- Write an equation that can be used to determine the length of the third side.
- Solve the equation.
- Verify the solution.

5. Solve each equation. Verify the solution.

a) $\frac{k}{3} = -1.5$

b) $10.5 = 3b - 12.5$

c) $5(x - 7.2) = 14.5$

d) $8.4 = 1.2b$

e) $2 + \frac{n}{3} = 2.8$

f) $-8 = 0.4(3.2 + h)$

7. Solve each equation. Verify the solution.

a) $\frac{56}{a} = -3.5, a \neq 0$

b) $8w - 12.8 = 6w$

c) $-8z + 11 = -10 - 5.5z$

d) $\frac{5x}{2} = 11 + \frac{2x}{3}$

e) $0.2(5 - 2r) = 0.3(1 - r)$

f) $12.9 + 2.3y = 4.5y + 19.5$

g) $\frac{2}{5}(m + 4) = \frac{1}{5}(3m + 9)$

8. Skateboards can be rented from two shops in a park

$$C = 15 + 3h$$

Shop Y charges \$15 plus \$3 per hour

Shop Z charges \$12 plus \$4 per hour

$$C = 12 + 4h$$

Determine the time in hours for which the rental charges in both shops are equal.

- Write an equation to determine the time.
- Solve the equation.
- Verify the solution.

$$15 + 3h = 12 + 4h$$

Math 9 **Worksheet 1**

Name _____

Variables Both Sides

Per/Sec. _____ Date _____

Solve.

1) $4y - 10 = 3y$

2) $5 - 3w = 2w$

3) $4p + 2 = 11p$

4) $5x - 3 = -x$

5) $7r - 5 = 2r + 5$

6) $4a + 2 = 6a - 12$

7) $7m + 15 = 3m + 3$

8) $9r + 4 = 7r + 4$

9) $4x - 1 = 6x + 2$

10) $3a - 7 = a + 8$

11) $3z + 15 = 6z - 13$

12) $7w - 6 = 6w - 7$

13) $4f + 5 - 2f = 3f$

14) $6u + 7 - 3u = 8 + 5u - 11$

15) $5p + 2 - 3p = 8 + 4p - 6$

16) $9y - 1 - 7y = 7 - 6y - 15$

17) $9 + 6a - 14 = 8 - a - 6 + 4a$

18) $4(y + 8) = 7(y + 2)$

19) $4(2a - 2) = -2(1 - 5a)$

20) $6(4 - 3j) = -2(3j - 5)$

21) $3(g - 5) + 8g = 18 - (3 - 10g)$

22) $18 - (2a - 5) - 2(a + 2) = 3a + 5$

23) $\frac{1}{3}(6 - 15w) = \frac{3}{8}(40w - 8)$

24) $\frac{2}{3}(6x + 9) = \frac{1}{2}(10x - 2)$

25) $-\frac{5}{6}(30 + 18k) = \frac{2}{3}(45 - 15k)$

26) $10 - \frac{5}{8}h = \frac{3}{8}h - 6$

27) $\frac{3}{10}y = 19 - \frac{1}{5}y$

28) $4 - \frac{2}{3}m = \frac{1}{2}m$

29) $\frac{2(5p - 1)}{3} = 3p + 1$

30) $\frac{7(15 - 3c)}{8} = -5c + 6$

31) $12c + 2.6 = 6.8c$

32) $0.7d - 512 = 0.5d + 288$

33) $0.3n + 0.4 = 0.6n + 0.7 - 0.5n$

34) $0.4(4k - 0.9) = 0.1(k + 0.9)$

$$25) \frac{-5}{6} (30 + 18K) = \frac{2}{3} (45 - 15K)$$

$$-25 \boxed{-15K} = 30 \boxed{-10K}$$

(Note: In the original image, a green box around -15K has a diagonal line through it with +15K written above it, and a green box around -10K has +15K written above it.)

$$-25 \overset{-30}{=} 30 \overset{-30}{+} 5K$$

$$\frac{-55}{5} = \frac{5K}{5}$$

$$\boxed{K = -11}$$

$$27) \frac{3}{10} y = 19 - \frac{1}{5} y$$

$$3y^{+2y} = 190 - 2y^{+2y}$$

$$\frac{5y}{5} = \frac{190}{5}$$

$$y = 38$$

$$13) \quad 4f + 5 - 2f = 3f$$
$$\cancel{2f} + 5 = 3f - 2f$$

$$\boxed{5 = f}$$

Math 9

Name _____

Variables Both Sides

Per/Sec. _____ Date _____

Solve.

1) $4y - 10 = 3y$

2) $5 - 3w = 2w$

3) $4p + 2 = 11p$

4) $5x - 3 = -x$

5) $7r - 5 = 2r + 5$

6) $4a + 2 = 6a - 12$

7) $7m + 15 = 3m + 3$

8) $9r + 4 = 7r + 4$

9) $4x - 1 = 6x + 2$

10) $3a - 7 = a + 8$

11) $3z + 15 = 6z - 13$

12) $7w - 6 = 6w - 7$

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22) $18 - (2a - 5) - 2(a + 2) = 3a + 5$

23) $\frac{1}{3}(6 - 15w) = \frac{3}{8}(40w - 8)$

24) $\frac{2}{3}(6x + 9) = \frac{1}{2}(10x - 2)$

25) $-\frac{5}{6}(30 + 18k) = \frac{2}{3}(45 - 15k)$

26) $10 - \frac{5}{8}h = \frac{3}{8}h - 6$

27) $\frac{3}{10}y = 19 - \frac{1}{5}y$

28) $4 - \frac{2}{3}m = \frac{1}{2}m$

29) $\frac{2(5p - 1)}{3} = 3p + 1$

30) $\frac{7(15 - 3c)}{8} = -5c + 6$

31) $12c + 2.6 = 6.8c$

32) $0.7d - 512 = 0.5d + 288$

33) $0.3n + 0.4 = 0.6n + 0.7 - 0.5n$

34) $0.4(4k - 0.9) = 0.1(k + 0.9)$

Worksheet 2

Math 9

Name _____

Distribution

Per/Sec. _____ Date _____

Solve.

1) $4(y - 9) - 10y = 0$

2) $-3(z + 5) + 29 = -10$

3) $22 = 5b + 7(b - 2)$

4) $-19 - 6(w - 8) = 35$

5) $57 = 22 - 7(k + 3)$

6) $21m + 6(m - 2) = 12$

7) $-11(4 - n) - n = -60$

8) $48 + 9(y - 5) = 48$

9) $6a + 2(4a + 1) = -5$

10) $-3(5 - 2t) + 28 = 1$

11) $55 + 5(3x + 7) = 0$

12) $13 = 4(-7r - 3) - 2r$

13) $-\frac{2}{3}(6z - 15) - 4z = 0$

14) $4x + \frac{1}{2}(12x + 2) = 3$

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

16) $-(8d - 7) - 63 = 0$

17) $-3u - (5u + 7) = -2$

18) $(6n - 9) - (2n - 19) = 0$

19) $-18 = -(7 - 2a) - (a + 12)$

20) $\frac{2}{3}(21 + 3a) + 6(\frac{1}{2} + a) = -15$

21) $10(\frac{1}{2}x - 2) - \frac{2}{5}(30 - 5x) = -11$

22) $\frac{1}{3}(r + 1) + \frac{1}{6}(2r - 5) = -1$

23) $7(2 - x) - 3(x + 1) + 3[9 - (4 - 2x)] = 18$


24) $-2(1 - 3y) - 3[(2 + y) - 5] + 3(y - 4) = 13$


Class/Homework


Worksheet



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Solve for the variable


Variables on each side


Distribute


Attachments

Equations01.pdf

Equations03.pdf

Equations02.pdf