

## Rockswold Ch 2.3

Last updated 2/8/2012

In #1 – 18 Solve for x in each formula

1.  $2x + 5a = bx - 3$

2.  $3x - 7 = ax + 2$

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

4.  $3 = \frac{ax + 5}{bx - 3}$

5.  $6 = \frac{3x - 4}{ax - 7}$

6.  $2 = \frac{5 - x}{ax - 1}$

7.  $7 = \frac{ax + 2}{bx - 5}$

8.  $y = \frac{3x + 2}{7x - 5}$

9.  $y = \frac{2x - 7}{3x + 5}$

10.  $y = \frac{5x - 7}{4x + 2}$

11.  $y = \frac{7x - 3}{5x - 4}$

12.  $y = \frac{2x - 7}{3x + 5}$

13.  $y = \frac{5x - 3}{2x + 7} - 4$

14.  $y = \frac{3x - 4}{2x + 5} + 1$

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

16.  $y = \frac{7x - 5}{2x + 3} - 4$

17.  $y = \frac{5x}{x + 4} - 3$

18.  $y = \frac{3x - 2}{2x + 7} - 1$

In #19 – 26, solve each equation using the graph or table provided.

19. Solve  $9.8 - 0.4x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} - \frac{2}{5}x$

given that the left side is

$L(x) = 9.8 - 0.4x$  and the right side is

$R(x) = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} - \frac{2}{5}x$

x	L(x)	R(x)
9	6.2	5.6
9.2	6.12	5.72
9.4	6.04	5.84
9.6	5.96	5.96
9.8	5.88	6.08
10	5.8	6.2
10.2	5.72	6.32

20. Solve  $9.8 - 0.4x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$

given that the left side is

$L(x) = 9.8 - 0.4x$  and the right side is

$R(x) = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$

x	L(x)	R(x)
5.4	7.64	6.68
5.6	7.56	6.92
5.8	7.48	7.16
6	7.4	7.4
6.2	7.32	7.64
6.4	7.24	7.88

21. Solve  $9.8 - 0.8x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$  given that

$Y_1 = 9.8 - 0.8x$  and  $Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$

x	Y <sub>1</sub>	Y <sub>2</sub>
4	6.6	5
4.2	6.44	5.24
4.4	6.28	5.48
4.6	6.12	5.72
4.8	5.96	5.96
5	5.8	6.2
5.2	5.64	6.44

22. Solve  $10.6 - 0.8x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$  given that

$Y_1 = 10.6 - 0.8x$  and  $Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$

x	Y <sub>1</sub>	Y <sub>2</sub>
4.8	6.76	5.96
5	6.6	6.2
5.2	6.44	6.44
5.4	6.28	6.68
5.6	6.12	6.92
5.8	5.96	7.16
6	5.8	7.4

23. Solve

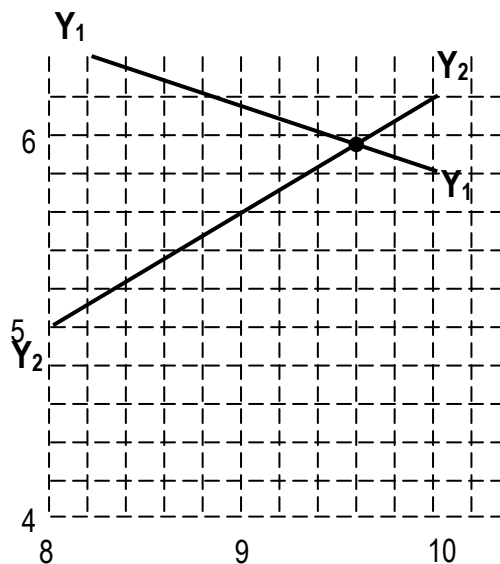
$$9.8 - 0.4x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} - \frac{2}{5}x$$

given that

$$Y_1 = 9.8 - 0.4x$$

and

$$Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} - \frac{2}{5}x$$



24. Solve

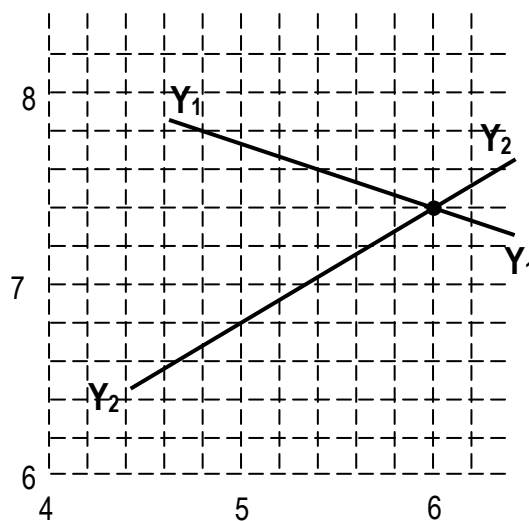
$$9.8 - 0.4x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$

given that

$$Y_1 = 9.8 - 0.4x$$

and

$$Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$



25. Solve

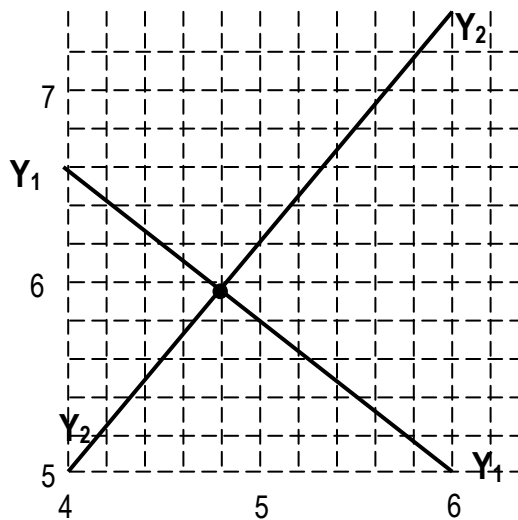
$$9.8 - 0.8x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$

given that

$$Y_1 = 9.8 - 0.8x$$

and

$$Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$



26. Solve

$$10.6 - 0.8x = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$

given that

$$Y_1 = 10.6 - 0.8x$$

and

$$Y_2 = \frac{1}{5}(7 + 6x) - 2\left(\frac{3}{4} + \frac{x}{10}\right) + \frac{3}{10} + \frac{1}{5}x$$

In #27 – 31, solve each equation using the following answer set:

- a. 4/15      b. -4/15      c. 15/4      d. -15/4  
 ae. 3/17      be. -3/17      ce. all reals      de. no solutions

27.  $2(3x + 5) = \frac{1}{2}(28x - 2) - 4x - 4$

28.  $\frac{2}{3}(6x + 15) = 2(2x + 5)$

29.  $\frac{2}{3}(6x + 12) = 2(2x + 5)$

30.  $12.3(1.6x - 5) = 19.68x - 61.5$

31.  $12.3(1.6x - 5.3) = 19.68x - 61.5$

Answers:

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

2.  $x = \frac{9}{3 - a}$

3.  $x = \frac{-10}{a - 2} = \frac{10}{2 - a}$

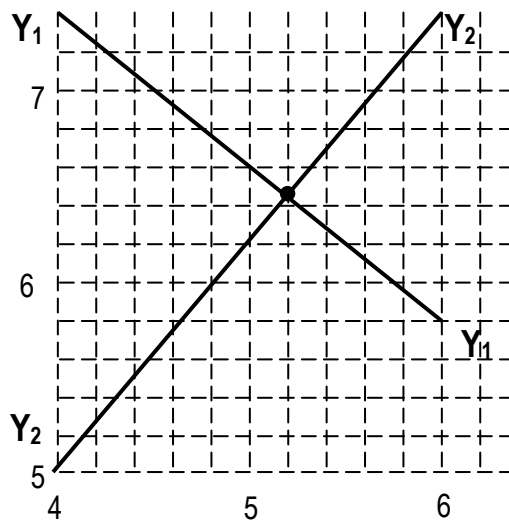
4.  $x = \frac{14}{3b - a}$

5.  $x = \frac{38}{6a - 3} = \frac{-38}{3 - 6a}$

6.  $x = \frac{6}{2a + 1} = \frac{-6}{-2a - 1}$

7.  $x = \frac{37}{7b - a} = \frac{-37}{a - 7b}$

8.  $y = \frac{5y + 2}{7y - 3}$



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Rockswold Ch 2.3

Linear Equations

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9.  $x = \frac{-5y-7}{3y-2}$

10.  $x = \frac{-2y-7}{4y-5}$

11.  $x = \frac{4y-3}{5y-7}$

12.  $x = \frac{-5y-7}{3y-2}$  OR  $\frac{5y+7}{2-3y}$

13.  $x = \frac{-7y-31}{2y+3}$  OR  $-\frac{7y+31}{2y+3}$

14.  $x = \frac{1-5y}{2y-5}$

15.  $x = -\frac{4y+3}{3y+1}$

16.  $x = -\frac{3y+17}{2y+1}$

17.  $x = -\frac{4y+12}{y+2}$

18.  $x = -\frac{7y+9}{2y-1}$

19. 9.6

20. 6.0

21. 4.8

22. 5.2

23. 9.6

24. 6.0

25. 4.8

26. 5.2

27. c

28. ce

29. de

30. ce

31. de