

Lesson #2 A: Solving Linear Equations and Creating Linear Equations of Direct Variation
(Reference: Lesson #7 & #8 in book)**Problem**

1. **Solve each of the following equations for the indicated variable. (Show all of your work.)**

1. $3y - 6 = -18$

2. $32 = -4m + 8$

3. $4x - 9x + 6 = -34$

4. Solve $2(2x + 3) - 3x = 6x + 30$ for x .

5. Solve $5(2x + 3) - 4x = 8x + 27$ for x .

6. Solve $3(x + 3) - 2x = 4(2x + 1) - 8$ for x .

7. Solve $x - 6y = 30$ for x .

8. Solve $4x - 3y = 18$ for y .

9. Solve $3x - 8y = 24$ for y .

10. Solve $2x - 6y = 32$ for x .

11. Solve $9x - 3y = 36$ for x .

12. Solve $4x + 3y = 9 - x$ for x .

13. Solve $2x - 3y + 6 = 10 + 4x$ for x .

14. Solve $3(y - 3) - 2 = 4x - 6y + 12$ for y .

15. Solve $4(x + 2) + 3y = 3(y - 2) + 2x$ for x .

16. Solve $5(x + 3) - y = 3(y + 2) - x$ for y .

17. **Solve each of the following word problems by creating a direct variation equation and then solving each of the equation for what is specified in the question.**

17. The number of teaspoons varies directly as the number of tablespoons. If using 12 teaspoons is the same as using 4 tablespoons, how many tablespoons would be needed in a recipe calling for 9 teaspoons?

18. The number of seconds varies directly as the number of minutes. When 240 seconds have passed, 4 minutes have passed. If 510 seconds have passed, how many minutes have passed?
19. When an item of clothing is on sale with a percent discount, the sale price varies directly as the original price. If a shirt normally priced at \$30 is on sale for \$21, what is the sale price (under the same discount structure) of a shirt normally priced at 40?
20. The perimeter of a square varies directly as the length of one side. If the perimeter is 20 when the side is 5, what is the perimeter when the side is 9?
21. The number of pages printed by a laser printer is directly proportional to the time the job takes. If the printer can print 21 pages in 2 minutes, how many pages can it print in 5 minutes?
22. The number of cups varies directly with the number of fluid ounces. In 5 cups, there are 40 fluid ounces. How many cups are there in 64 fluid ounces?