

evens

312

M7+: Unit 3 - Equations STUDY GUIDE -

SWOSP!!

NO Calculator!

Short Answer

2. Caitlin had \$318 in her bank account. She withdrew \$14 each week to pay for a swimming lesson. She now has \$136.

a. Write an equation that can be used to find the number of swimming lessons that she paid for.

$w = \text{week}$
 $318 - 14w = 136$

b. How many swimming lessons did she pay for? 13 lessons

c. At the time she had \$136, the cost of a lesson rose to \$19. How many lessons can she pay for with her remaining \$136?

$19w = 136$
 $w = 7.1$ about 7

3. Cars For You will rent a car for \$17 per day plus \$.23 per mile driven. Rent-A-Rama will rent the same car for \$26 per day plus \$.13 per mile driven.

a. Write an equation that represents the situation when the total rental cost for one day is the same at both rental agencies.

(equal) $\Rightarrow 17 + .23m = 26 + .13m$

b. For how many miles is the total rental cost for one day the same for each car? 90 miles

c. If you plan to rent a car for one day and drive 100 miles, which rental agency should you choose?

$17 + .23(100) = 17 + 23 = 40$
 $26 + .13(100) = 26 + 13 = 39$ so Rent-A-Rama

4. A customer went to a garden shop and bought some potting soil for \$16.50 and 6 shrubs. The total bill was \$72.00. Write and solve an equation to find the price of each shrub.

5. The fare for riding in a taxi is a \$3 fixed charge and \$0.80 per mile. The fare for a ride of d miles is \$6.75. Write an equation that could be used to find d .

7. Write an equation to find three consecutive even integers whose sum is -132.

8. Write an equation to find four consecutive integers whose sum is 206.

$x + (x+1) + (x+2) + (x+3) = 206$

9. Ms. Baker purchased a number of juice packs at a cost of \$0.30 each and a loaf of bread that cost \$1.19. The total cost of her purchases was \$2.99. Write an equation that you can use to determine how many juice packs Ms. Baker purchased.

Solve the equation.

10. $v - \frac{3}{10} = \frac{2}{3}$
 $\frac{3}{10} + \frac{3}{10} \quad \frac{2}{3} + \frac{10}{10}$
 $y = \frac{2}{3} + \frac{3}{10}$
 $\frac{20}{30} + \frac{9}{30} = \frac{29}{30}$

11. $\frac{4}{5}x = 28$

12. $-6 = \frac{x}{8} + 4$
 $-4 \quad -4$
 $-10 = \frac{x}{8}$
 $-80 = x$

24. $\frac{-27}{127} + 3x = 3$ $\rightarrow 8x = \frac{30}{3}$
 $\frac{-27}{127} + \frac{36x}{127} = 3$
 $\frac{36x - 27}{127} = 3$
 $36x - 27 = 381$
 $36x = 408$
 $x = 11.33$ (Note: The handwritten solution shows $x=10$, which is incorrect based on the equation.)

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

27. $6d - 10d = 40$

29. $72 = -2(m + 3) + m$

30. $6 = 2(x + 8) - 5x$
 $6 = 2x + 16 - 5x$
 $6 = -3x + 16$
 $-10 = -3x$
 $x = \frac{10}{3}$ or $3.\bar{3}$

32. $\frac{3}{4}(x - 12) = 3$
 $\frac{3}{4}x - \frac{3}{4}(12) = 3$
 $\frac{3}{4}x - 9 = 3$
 $\frac{3}{4}x = 12$
 $x = 12 \cdot \frac{4}{3} = 16$

33. $\frac{2}{7}y + 2 = \frac{8}{7}$
 $\frac{2}{7}y = \frac{8}{7} - 2$
 $\frac{2}{7}y = \frac{8}{7} - \frac{14}{7}$
 $\frac{2}{7}y = -\frac{6}{7}$
 $y = -3$

36. $x + 9 = 5(4x - 2)$
 $x + 9 = 20x - 10$
 $x - 20x = -10 - 9$
 $-19x = -19$
 $x = 1$

13. $57 - 14 + 7w = 113$

15. $3.9x + 4.7 = 12.5$

18. $3p - 1 = 5(p - 1) + 2(7 - 2p)$
 $3p - 1 = 5p - 5 + 14 - 4p$
 $3p - 1 = p + 9$
 $2p = 10$
 $p = 5$

19. $4x + 8 = 3x + 6$

20. $-6y + 14 + 4y = 32$

22. $7p - 7 + 2p = 11$

$9p - 7 = 11$
 $9p = 18$
 $p = 2$

$-2y + 14 = 32$
 $-2y = 18$
 $y = -9$

$-1 = 6p + -19$
 $18 = 6p$
 $3 = p$