

LEVEL: PROFICIENT/MASTERY

TARGET 1: SOLVING LINEAR EQUATIONS WITH VARIABLES ON ONE SIDE OF THE EQUATION.

Directions: Solve.

1) $2y - 16 = 18$

2) $\frac{x}{2.9} + 5.4 = 4.4$

3) $5x - 3(2x - 4) = 10$

4) $-5.3x + 2.8x - 8.45 = 22.95$

5) $5.7 + \frac{1}{3}(5x - 6) = -18$

6) You recently joined iTunes. You are charged a \$2.50 registration fee and charged \$.35 for each song you download. If you spent \$5.30 during the first month, how many songs did you download? Show work for evidence.

7) At a school fund-raising drive, \$350 was collected for washing cars, vans and SUVs. The cost of a wash for any type of vehicle was \$2.50. In addition, a very generous person gave a donation of \$65. How many cars were washed?

TARGET 2: SOLVING LINEAR EQUATIONS WITH VARIABLES ON BOTH SIDES OF THE EQUATION.

Directions: Solve the equation, if possible.

8) $12y + 6 = 6(2y + 1)$

9) $5(1 + 4m) = 2(3 + 10m)$

10) $5(1.2k + 6) = 7.1k + 34.4$

11) $14 - \frac{1}{5}(j - 10) = \frac{2}{5}(25 + j)$

12) The fee for camping for a particular campsite for non-members is \$45 plus a charge of \$35 per night. For members they are not charged a registration fee, but they are charged \$40 per night. After how many nights of camping is the total cost of members the same as the total cost for non-members?

13) Give an example of an equation that doesn't have a solution and **explain** why it doesn't.

14) Describe and correct the error in solving the equation:

$$\begin{aligned} 6(2y + 6) &= 4(9 + 3y) \\ 12y + 36 &= 36 + 12y \\ 12y &= 12y \\ 0 &= 0 \end{aligned}$$

TARGET 3: WRITING AND SOLVING PROBLEMS USING PROPORTIONS/PERCENTS

Directions: Write a ratio.

15) The McHenry High School soccer team has 12 away matches and 8 home matches. What is the ratio of home matches to away matches?

16) Jared has 5 apples and Alex has 20 apples. Write the ratio of the number of apples Jared has to the number of apples Alex has.

17) On twitter, Luke has tweeted 40 times and John has tweeted a total of 20 times. What is the ratio of Luke's tweets to the total number of tweets?

Directions: Solve the following proportions.

18) $\frac{49}{98} = \frac{2}{x}$

19) $\frac{5}{13} = \frac{k-4}{39}$

20) $\frac{10h}{108} = \frac{5}{9}$

21) \$12 is what percent of \$96?

22) 20% of what distance is 125 miles?

23) Adrian got 35% of the questions right on his test. If the test was out of 40 questions, how many questions did he get right?

24) When 2 full moons appear in the same month, the second is called a blue moon. On average, 2 blue moons occur every 5 years. Find the number of blue moons that are likely to occur in the next 25 years.

TARGET 4: WRITING AND SOLVING LINEAR EQUATIONS FOR REAL WORLD APPLICATIONS

Directions: Set up an equation to model the real-world application and solve for the appropriate unknowns.

<p>25) A certain school has 450 juniors. In a recent survey, 3 out of every 5 juniors interviewed walk to school. How many juniors walk to school?</p>	<p>26) Nick eats 130 almonds in 4 days. How many almonds will Nick eat in 20 days?</p>
<p>27) The length of one side of a rectangle is 4 inches less than the width. If the perimeter of the rectangle is 50 inches, find the width of the rectangle in inches.</p>	<p>28) For Halloween, Jim bought some bags of candy for \$5.25 each. He also spent \$25.75 on a Halloween costume. If he spent \$73, how many bags of candy did Jim buy?</p>
<p>29) A builder uses 20 bricks to cover 3 square feet of wall. How many square feet can be covered with 2,090 bricks?</p>	<p>30) Sam has a savings account and currently has \$3,500 in the account. He will have \$330 added to his savings account with each paycheck to save for a vacation to Hawaii. Tiffany has \$5,600 in her savings account. She signed up to have \$90 taken out of her savings account for her health insurance program every time she receives a paycheck. After how many checks will they have the same amount of money in their savings account?</p>

Answers: 25) 270 juniors 26) 650 almonds 27) width = 14.5 inches 28) 9 bags 29) 313.5 square feet 30) 5 paychecks