

Directions: Write an expression for the following scenarios. Be sure to define your variable.

1. A birthday party at a skating rink costs \$45 to reserve a party and \$4.50 per guest for skating and skate rental. Write an expression that represents the total cost of the party and define your variable.

$g$ : # of guests

$$45 + 4.50g$$

2. The student council ordered 1000 pencils embossed with the school name to give to honor roll students and they give each honor roll student two pencils. Write an expression to represent how many pencils will be remaining and define your variable.

$x$ : # of students

$$1000 - 2x$$

3. Caden and four of his friends had a car wash to earn some extra money. They will split the profits, but Caden will get an extra \$18 to repay his parents for the car wash supplies. Write an expression to represent that represents how much Caden will receive and define your variable.

$e$ : amount of earnings/profits

$$\frac{e}{5} + 18$$

4. Tyler is planning a party at a restaurant. There is a flat fee of \$250 to reserve the restaurant for the evening and a charge of \$20 per person for food. Write an expression to represent the total cost Tyler will pay for his guests and define your variable.

$p$ : # of people

$$250 + 20p$$

5. A car wash charges \$25 for a thorough inside and outside cleaning of your car. However, they will give you \$0.50 off for each customer you refer to the carwash. Write an expression that represents how much you will pay after referring people to the car wash and define your variable.

$c$ : # of customers

$$25 - 0.50c$$

6. Five friends are going to a concert, where a ticket costs \$35.00 per person plus a service fee of \$8.00 for purchasing the tickets online. The five friends are going to split the cost evenly. Write an expression that represents how much each friend will have to pay and define your variable.

$t$ : # of tickets

$$\frac{35t + 8}{5}$$

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Directions: Create an expression for the following descriptions. Remember some of our "cautions":

- **Less than – requires of flip of the terms**
  - Five less than  $x \rightarrow x - 5$
- **Times a number VS times the difference/sum of (requires parenthesis)**
  - Three times a number  $\rightarrow 3x$
  - Three times the sum of a number and 2  $\rightarrow 3(x + 2)$
- **The quotient of – the word "and" determines what is in the numerator and denominator**
  - The quotient of  $k$  decreased by 7 and three  $\rightarrow \frac{k-7}{3}$

7. Eight less than a number

$$x - 8$$

9. three times the sum of a number and four

$$3(x + 4)$$

11. The square of the sum of a number and five

$$(x + 5)^2$$

13. Three more than the quotient of five and  $x$

$$\frac{5}{x} + 3$$

15. Six less than twice a number

$$2x - 6$$

17. Four times the difference of  $x$  and three

$$4(x - 3)$$

19. Seven more than twice a number

$$2x + 7$$

21. One less than the product of four and  $x$

$$4x - 1$$

23. Six less than the square of a number

$$x^2 - 6$$

25. The quotient of three times a number and 10

$$\frac{3x}{10}$$

27. The sum of one third of a number and fourteen

$$\frac{1}{3}x + 14$$

29. The quotient a number added to four and nine

$$\frac{x + 4}{9}$$

8. Seven more than the cube of a number

$$x^3 + 7$$

10. Two less than five times a number

$$5x - 2$$

12. A number decreased by four

$$x - 4$$

14. Four more than the product of 2 and  $y$

$$2y + 4$$

16. Nine times a number decreased by four

$$9x - 4$$

18. Twice the sum of  $y$  and three

$$2(y + 3)$$

20. Ten more than the quotient of a number and three

$$\frac{x}{3} + 10$$

22. Eight times the difference of twelve and a number

$$8(12 - x)$$

24. The square of the sum of a number and one

$$(x + 1)^2$$

26. Ten less than one half a number

$$\frac{1}{2}x - 10$$

28. One fourth times the difference of a number and three

$$\frac{1}{4}(x - 3)$$

30. The quotient of twice a number decreased by 6 and 9

$$\frac{2x - 6}{9}$$