

EXPRESSIONS

ALGEBRAIC and VERBAL

ANSWERS

ALGEBRAIC EXPRESSIONS ALLOW US TO TRANSLATE WRITTEN INFORMATION OR VERBAL PHRASES WITH A VARIABLE OR UNKNOWN QUANTITY INTO MATHEMATICS. TAKE A LOOK AT THE SENTENCE BELOW.

Gerry is going to buy some shirts that cost \$9.00 each.

WE KNOW HOW MUCH THE SHIRTS COST. THIS AMOUNT IS CALLED A **CONSTANT** BECAUSE IT CONSTANTLY STAYS THE SAME, BUT HOW MANY SHIRTS IS HE GOING TO BUY? THIS UNKNOWN AMOUNT IS CALLED A **VARIABLE**, BECAUSE IT CAN VARY OR CHANGE. IN ALGEBRA WE USE SYMBOLS OR LETTERS TO REPRESENT VARIABLES. WE CAN WRITE THIS SENTENCE AS A VERBAL EXPRESSION AND AN ALGEBRAIC EXPRESSION.

Verbal expression → 9 times a number

Algebraic expression → $9s$

9 IS A CONSTANT AND IS THE AMOUNT EACH SHIRT COST. THE "s" REPRESENTS THE NUMBER OF SHIRTS HE BUYS. IT'S A VARIABLE BECAUSE IT CAN CHANGE.

A **verbal expression** contains words to explain mathematics.

An **algebraic expression** contains one or more variables. It usually contains constants (numbers) and at least one operation.

Below are a few examples of algebraic expressions.

$$y - 5$$

y is the variable and 5 is the constant.

5 less than a number

$$4z$$

$4z$ means $4 \times z$.

the product of 4 and a number

$$\frac{t}{8}$$

$\frac{t}{8}$ means $t \div 8$.

the quotient of a number and 8

Write an algebraic expression for each verbal expression.

a. 5 less than 4 times a number

$$4b - 5$$

1. the sum of 9 and a number

$$9 + x$$

2. a number more than 8

$$8 + h$$

3. the quotient of 2 and a number

$$2 \div m \text{ or } \frac{2}{m}$$

4. the difference of a number and 4

$$d - 4$$

5. a number decreased by 11

$$k - 11$$

6. twice the sum of a number and 6

$$2(e + 6)$$

7. the product of 8 and a number

$$8y$$

8. 14 less than a number

$$z - 14$$

9. 3 times a number plus 7

$$3n + 7$$

10. a number divided by 5

$$\frac{v}{5} \text{ or } v \div 5$$

11. one-half of a number

$$\frac{1}{2} \cdot g$$

Write a verbal expression for each algebraic expression.

ANSWERS MAY VARY.

b. $3(2 + t)$ **3 times the sum of 2 and a number**

16. $k - 4$

4 less than a number

12. $6y$ **the product of 6 and a number**

17. $y \div 9$

a number divided by 9

13. $\frac{1}{2}(g + 8)$ **half the sum of a number and 8**

18. $7 + d$

the sum of 7 and a number

14. $5 - k$ **5 minus a number**

19. $\frac{6}{r}$

the quotient of 6 and a number

15. $h + 13$ **a number plus 13**

20. $2b + 4$

two times a number plus 4