

Substituting into Algebraic Expressions

Using the value of the letter, find the value for each of these expressions.

1) $5a + 7$ $a = 6$

2) $80 - 9b$ $b = 4$

3) $\frac{120}{c} + 7$ $c = 12$

4) $9d + 10$ $d = 8$

5) $e^2 + 15$ $e = 3$

6) $6f - 30$ $f = 11$

7) $180 - 11g$ $g = 7$

8) $\frac{h}{7} + 8$ $h = 42$

9) $4i + 8i^2$ $i = 2$

10) $j^2 - 15$ $j = 8$

11) $200 - 6k$ $k = 20$

12) $\frac{150}{m} - 5$ $m = 15$

13) $7n + 8$ $n = 0$

14) $90 - 5p$ $p = 1$

15) $\frac{q}{11} + 3$ $q = 44$

16) $\sqrt{r} + 5$ $r = 36$

17) $4s^2 + 15$ $s = 9$

18) $17t - 13 + 3u$ $t = 5$ $u = 2$

19) $900 + v^3 - 10w$ $v = 10$ $w = 15$

20) $\sqrt{x} + y^2 - 12z$ $x = 100$ $y = 5$ $z = 1$

Substituting into Algebraic Expressions Memo

Using the value of the letter, find the value for each of these expressions.

$$\begin{aligned} 1) \quad 5a + 7 & \quad a = 6 \\ &= 5 \times 6 + 7 \\ &= 30 + 7 \\ &= 37 \end{aligned}$$

$$\begin{aligned} 2) \quad 80 - 9b & \quad b = 4 \\ &= 80 - 9 \times 4 \\ &= 80 - 36 \\ &= 44 \end{aligned}$$

$$\begin{aligned} 3) \quad \frac{120}{c} + 7 & \quad c = 12 \\ &= \frac{120}{12} + 7 \\ &= 10 + 7 \\ &= 17 \end{aligned}$$

$$\begin{aligned} 4) \quad 9d + 10 & \quad d = 8 \\ &= 9 \times 8 + 10 \\ &= 72 + 10 \\ &= 82 \end{aligned}$$

$$\begin{aligned} 5) \quad e^2 + 15 & \quad e = 3 \\ &= (3)^2 + 15 \\ &= 9 + 15 \\ &= 24 \end{aligned}$$

$$\begin{aligned} 6) \quad 6f - 30 & \quad f = 11 \\ &= 6 \times 11 - 30 \\ &= 66 - 30 \\ &= 36 \end{aligned}$$

$$\begin{aligned} 7) \quad 180 - 11g & \quad g = 7 \\ &= 180 - 11 \times 7 \\ &= 180 - 77 \\ &= 103 \end{aligned}$$

$$\begin{aligned} 8) \quad \frac{h}{7} + 8 & \quad h = 42 \\ &= \frac{42}{7} + 8 \\ &= 6 + 8 \\ &= 14 \end{aligned}$$

$$\begin{aligned} 9) \quad 4i + 8i^2 & \quad i = 2 \\ &= 4 \times 2 + 8 \times 2^2 \\ &= 8 + 8 \times 4 \\ &= 8 + 32 \\ &= 40 \end{aligned}$$

$$\begin{aligned} 10) \quad j^2 - 15 & \quad j = 8 \\ &= 8^2 - 15 \\ &= 64 - 15 \\ &= 49 \end{aligned}$$

Substituting Into Algebraic Expressions Memo

$$\begin{aligned}
 11) \quad & 200 - 6k & k = 20 \\
 & = 200 - 6 \times 20 \\
 & = 200 - 120 \\
 & = 80
 \end{aligned}$$

$$\begin{aligned}
 12) \quad & \frac{150}{m} - 5 & m = 15 \\
 & = \frac{150}{15} - 5 \\
 & = 10 - 5 \\
 & = 5
 \end{aligned}$$

$$\begin{aligned}
 13) \quad & 7n + 8 & n = 0 \\
 & = 7 \times 0 + 8 \\
 & = 0 + 8 \\
 & = 8
 \end{aligned}$$

$$\begin{aligned}
 14) \quad & 90 - 5p & p = 1 \\
 & = 90 - 5 \times 1 \\
 & = 90 - 5 \\
 & = 85
 \end{aligned}$$

$$\begin{aligned}
 15) \quad & \frac{q}{11} + 3 & q = 44 \\
 & = \frac{44}{11} + 3 \\
 & = 4 + 3 \\
 & = 7
 \end{aligned}$$

$$\begin{aligned}
 16) \quad & \sqrt{r} + 5 & r = 36 \\
 & = \sqrt{36} + 5 \\
 & = 6 + 5 \\
 & = 11
 \end{aligned}$$

$$\begin{aligned}
 17) \quad & 4s^2 + 15 & s = 9 \\
 & = 4 \times 9^2 + 15 \\
 & = 4 \times 81 + 15 \\
 & = 324 + 15 \\
 & = 339
 \end{aligned}$$

$$\begin{aligned}
 18) \quad & 17t - 13 + 3u & t = 5 & u = 2 \\
 & = 17 \times 5 - 13 + 3 \times 2 \\
 & = 85 - 13 + 6 \\
 & = 78
 \end{aligned}$$

$$\begin{aligned}
 19) \quad & 900 + v^3 - 10w & v = 10 & w = 15 \\
 & = 900 + (10)^3 - 10 \times 15 \\
 & = 900 + 1\,000 - 150 \\
 & = 1\,750
 \end{aligned}$$

$$\begin{aligned}
 20) \quad & \sqrt{x} + y^2 - 12z & x = 100 & y = 5 & z = 1 \\
 & = \sqrt{100} + 5^2 - 12 \times 1 \\
 & = 10 + 25 - 12 \\
 & = 23
 \end{aligned}$$