

Boost Free Lessons - Year 8 Maths

Lesson 3: Algebraic Expressions

Name: _____ Grade: _____ Date: _____

Worked Example 1

Write an expression for “5 less than three times a number n ”.

1. Break the sentence into parts.
2. “Three times a number n ” means $3 \times n$, written $3n$.
3. “5 less than” means take 5 away from that, so the 5 goes second.

$3n - 5$

Worked Example 2

Find the value of $4x - 7$ when $x = 5$.

1. Substitution means replacing the letter with its value.
2. Remember $4x$ means $4 \times x$, so write $4 \times 5 - 7$.
3. Order of operations: multiplication before subtraction, so $20 - 7$.

$= 13$

Remember: Substitution means replacing each letter with its value. Put the multiplication sign back in as you go: $4x$ means $4 \times x$, and $3x^2$ means $3 \times x \times x$.



Question 1: Write an algebraic expression for each of the following.

1. 7 more than m
2. double p , then add 3
3. 9 less than k
4. the product of 5 and t
5. a number w divided by 6
6. 4 less than triple n
7. the sum of a and $2b$
8. half of x , then subtract 1



Question 2: Find the value of each expression when $a = 3$, $b = -2$ and $c = 5$.

1. $a + b$

2. $4a$

3. ab

4. $c - a$

5. $2a + 3b$

6. a^2

7. b^2

8. $c - 2b$

9. abc

10. $a + b + c$



Question 3: Answer the following questions.

1. A rectangle has length l and width 4. Write an expression for its area, then find the area when $l = 7$.
2. A taxi charges \$5 plus \$3 per kilometre. Write an expression for a trip of k kilometres, then find the cost of an 8 km trip.
3. Find the value of $3x^2$ when $x = 4$.
4. Find the value of $2(y + 5)$ when $y = -1$.
5. A rectangle has length $2x$ and width x . Write an expression for its perimeter, then find it when $x = 6$.





Every student has gaps. The hard part is knowing exactly where they are.
That is what a Boost assessment is for.

Book a Free Assessment

Normally valued at \$199, free for new families

- A friendly skills check aligned to the NSW syllabus
- Face to face with our qualified tutors
- A clear picture of your child's strengths and gaps
- A weekly plan built around what they actually need

Book a Free Assessment →

boosttutoring.com.au/contact



Answers: Algebraic Expressions**Question 1**

1. $m + 7$

2. $2p + 3$

3. $k - 9$

4. $5t$

5. $\frac{w}{6}$

6. $3n - 4$

7. $a + 2b$

8. $\frac{x}{2} - 1$

Question 2

1. 1

2. 12

3. -6

4. 2

5. 0

6. 9

7. 4

8. 9

9. -30

10. 6

Question 3

1. Area = $4l$, and when $l = 7$ the area is 28

2. Cost = $5 + 3k$, and an 8 km trip costs \$29

3. 48

4. 8

5. $P = 6x$, and when $x = 6$ the perimeter is 36

