Substitution into Formulae

Year 10–11 Maths · Years 10–11 · NCEA Level 1 · About 20 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Substitute numbers into linear expressions
- Substitute into expressions that contain squares
- Substitute negative numbers and use a formula

WORKED EXAMPLE

Find the value of $3x^2 - 2x$ when $x = -2$.

1. Square first: $(-2)^2 = 4$.
2. Multiply: $3 \times 4 = 12$.
3. Work out the second term: $2 \times (-2) = -4$, and subtracting -4 is the same as adding 4.
4. Combine: $12 + 4 = 16$.

Answer: 16

Questions

Show your working in the space under each question.

1. Find the value of $3x + 4$ when $x = 5$

2. Find the value of $2a - 3b$ when $a = 7$ and $b = 2$

3. Find the value of $x^2 + 3$ when $x = 4$

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4. Find the value of $5y^2$ when $y = 3$

5. Find the value of $2x^2 - x$ when $x = -3$

6. Find the value of $(a + b)/c$ when $a = 14$, $b = 6$ and $c = 4$

7. Use the formula $v = u + at$ to find v when $u = 5$, $a = 3$ and $t = 4$

8. Use the formula $A = \frac{1}{2}bh$ to find A when $b = 10$ and $h = 7$

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Answers: Substitution into Formulae

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Find the value of $3x + 4$ when $x = 5$	**19**
2	Find the value of $2a - 3b$ when $a = 7$ and $b = 2$	**8**
3	Find the value of $x^2 + 3$ when $x = 4$	**19**
4	Find the value of $5y^2$ when $y = 3$	**45**
5	Find the value of $2x^2 - x$ when $x = -3$	**21**
6	Find the value of $(a + b)/c$ when $a = 14$, $b = 6$ and $c = 4$	**5**
7	Use the formula $v = u + at$ to find v when $u = 5$, $a = 3$ and $t = 4$	**$v = 17$**
8	Use the formula $A = \frac{1}{2}bh$ to find A when $b = 10$ and $h = 7$	**$A = 35$**

TUTOR TIP

Put negative numbers in brackets when you substitute. $(-3)^2$ is 9, but a calculator reads -3^2 as -9.

Stuck on a question? Work through it live with a tutor.

YFCampus offers one-to-one online Maths tutoring matched to your school curriculum. Book a free trial class at **www.yfcampus.com/nz**

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