Substitution into Formulae

Year 9–10 Maths · Years 9–10 · 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/au**

Written for students aged 13 to 16 and suitable for Years 9–10. Check your school's curriculum for the exact order of topics. YFCampus is independent and is not affiliated with any exam board or education ministry.