# GCSE Exam Questions

## Substitution | Algebra

## GCSE Exam Questions: Substitution

**1)**  **(a)**  Work out the value of $3x + 2y$ when $x = 6$ and $y = 4$

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**(1)**

**(b)**  Work out the value of  $\dfrac{4a - 10b}{5}$  when $a = 5$ and $b = $ -2

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**(2)**

**(3 marks)**

**2)**  The cost, $C$, of hiring a canoe is given by the formula

$$C = 20 + 2.5h$$

where $h$ is the number of hours the canoe is to be hired for.

**(a)**  Calculate the cost of hiring the canoe for 6 hours.

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**(2)**

**(b)**  For how many hours did Lucy hire the canoe if she paid £27.50?

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**(2)**

**(4 marks)**

**3)**  Given that $a = 5$ and $b = 8$, state whether each of the following statements are true or false.

Give reasons for your answers.

**(a)**  $ab = 58$

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**(2)**

**(b)**  $3a^2 = 75$

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**(2)**

**(4 marks)**

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# GCSE Exam Questions: Substitution Answers

|  | Question | Answer | Marks |
|---|---|---|---|
| **1) (a)** | Work out the value of $3x + 2y$ when $x = 6$ and $y = 4$. | $3 \times 6 + 2 \times 4 = 26$ | **(1)** |
| **(b)** | Work out the value of $\frac{4a - 10b}{5}$ when $a = 5$ and $b = -2$ | $4 \times 5 = 20$ and $10 \times -2 = -20$ $$\frac{20 - -20}{5} = \frac{40}{5} = 8$$ | **(1)** **(1)** |
| **2) (a)** | Calculate the cost of hiring the canoe for 6 hours. | $C = 20 + 2.5 \times 6$ $C = 20 + 15$ $C = (£)\ 35$ | **(1)** **(1)** |
| **(b)** | For how many hours did Lucy hire the canoe if she paid £27.50? | $27.50 = 20 + 2.5h$ $7.50 = 2.5h$ $h = 3$ | **(1)** **(1)** |
| **3) (a)** | $ab = 58$ | False $ab$ means $a \times b$ | **(1)** **(1)** |
| **(b)** | $3a^2 = 75$ | True $a^2$ is calculated first, then multiply by 3 | **(1)** **(1)** |

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