

Substitution Past Paper Questions



Q1.

Complete this table of values.

n	$3n + 2$
12
.....	47

(Total for question is 3 marks)

Q2.

$$p = n^3 - 5$$

$$n = 2$$

Work out the value of p .

.....

(Total for question = 2 marks)



Q3.

A teacher asked Tyrese to find the value of $2n^2 - 3n$ when $n = 3$

Here is his working.

$$\begin{aligned} 2 \times 3^2 - 3 \times 3 \\ = 6^2 - 9 \\ = 36 - 9 \\ = 27 \end{aligned}$$

(i) What mistake has Tyrese made?

.....
.....

(1)

The teacher then asked Megan to find the value of $2n^2 - 3n$ when $n = -4$

Here is her working.

$$\begin{aligned} 2 \times -4^2 - 3 \times -4 \\ = 2 \times -16 + 12 \\ = -32 + 12 \\ = -20 \end{aligned}$$

(ii) What mistake has Megan made?

.....
.....

(1)

(Total for question = 2 marks)

Q4.

$$a = 5$$

$$b = 3$$

Work out the value of $4a + 2b$

.....

(Total for Question is 2 marks)

Q5.

$$w = 4u + 3$$

Find the value of w when $u = 8$

.....

(Total for question = 2 marks)

Q6.



Given $x = 4$

Work out the value of $2x^2 + 7$

.....
(Total for Question is 2 marks)

Q7.

$x = 0.7$

Work out the value of $\frac{(x+1)^2}{2x}$

Write down all the figures on your calculator display.

.....
(Total for Question is 2 marks)

Q8.

A rule to change a UK shoe size to a European shoe size is



multiply the UK shoe size by 1.25 and then add 32

European shoe sizes are given as whole numbers.

Katie's UK shoe size is 5

(a) Work out Katie's European shoe size.

.....
(2)

Gustav's European shoe size is 42

(b) Work out Gustav's UK shoe size.

.....
(2)

(Total for question = 4 marks)

Q9.

$$S = \pi^2(b^2 - a^2)$$

$$a = 8, b = 10$$

Calculate the value of S .

Give your answer correct to 3 significant figures.

.....
(Total for question = 2 marks)

Q10.



You can use this rule to work out the total hire charge, in pounds (£), for hiring a 3D printer for a number of weeks.

$$\text{Total hire charge (£)} = \text{number of weeks} \times 70 + 50$$

Mia wants to hire a 3D printer for 4 weeks.

(a) Work out the total hire charge.

£
(2)

Zahir hires a 3D printer.

The total hire charge is £680

(b) For how many weeks does Zahir hire the 3D printer?

..... weeks
(2)

(Total for question = 4 marks)