3.13 Substitution: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out the value of $2x^2 + 1$ when x = 3. Show your method.

(Total for Question 1 is 2 marks)

2 Evaluate the expression 4t - 3 when t = 1.5.

(Total for Question 2 is 2 marks)

3 Work out the value of 7p - 7 when p = -3.

(Total for Question 3 is 2 marks)

4 Work out the value of $2x^2 + 2x + 5$ when x = 3.

(Total for Question 4 is 3 marks)

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5 Work out the value of $3k + 8$ when $k = -5$.

(Total for Question 5 is 2 marks)

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6 Work out the value of $y^2 + 6y + 8$ when $y = -3$.

(Total for Question 6 is 3 marks)

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7 Use the formula $E = (1/2)mv^2$ to work out the value of E when $m = 4$, $v = 22$.

(Total for Question 7 is 3 marks)

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8 Given the formula $V = lwh$, find V when $l = 5$ cm, $w = 3$ cm and $h = 2$ cm.

(Total for Question 8 is 2 marks)

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9 Let $g(x) = 4 - 3x$. Find x such that $g(x) = 13$. Show your working.

(Total for Question 9 is 4 marks)

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Mark scheme · 3.13 Substitution: 30-minute Pack

Question 1

substitute x = 3 and evaluate 2 x 3^2 + 1 or equivalent method	**M1**
19 cao	**A1**

Answer: 19

Question 2

substitute t = 1.5 and show multiplication 4 x 1.5 or equivalent	**M1**
3.0 or 3 cao	**A1**

Answer: 3

Question 3

substitutes p = -3	**M1**
-28	**A1**

Answer: -28

Question 4

squares 3 correctly: 9	**M1**
complete substitution	**M1**
29	**A1**

Answer: 29

Question 5

substitutes k = -5	**M1**
-7	**A1**

Answer: -7

Question 6

squares -3 correctly: 9	**M1**
complete substitution	**M1**
-1	**A1**

Answer: -1

Question 7

correct substitution	**M1**
correct evaluation of a term or the powers	**M1**
968	**A1**

Answer: 968

Question 8

substitute and multiply l x w x h	**M1**
30 cm^3 cao	**A1**

Answer: 30 cm^3

Question 9

set 4 - 3x = 13 and rearrange to linear form	**M1**
subtract 4: -3x = 9	**M1**
divide both sides by -3 to get x = -3	**M1**
x = -3 cao	**A1**

Answer: x = -3

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