

5.3 Answers

GCSE Mathematics Functions I

5.3.1 Solutions to 5.1 Introductory Example)

 $fg(2) = 43$

[2 marks]

 $fg(2z) = f(8z + 1)$
 $= 40z + 3$

[2 marks]

 $fg(3z + 1) = f(12z + 5)$
 $= 60z + 23$

[2 marks]

5.3.2 Solutions to 5.2 Exercise

Answer 1

(i) 34

(ii) 64

(iii) $150z + 34$

(iv) $60z + 124$

(v) -1

(vi) 10

[6 marks]

Answer 2

(i) 94

(ii) 19

(iii) $60z + 34$

(iv) $45z + 79$

[4 marks]

Answer 3

(i) 1

(ii) 25

(iii) $36z + 1$

(iv) $60z + 13$

[4 marks]

Answer 4

$4x + 3$

Answer 5

$15x + 6$

Answer 6

$65 - 7x$

[2, 2, 2 marks]

Answer 7

$4x^2 - 4x + 6$

[2 marks]

Answer 8

(i) $\frac{21}{x+4} - 6$

(ii) $\frac{3}{7x-2}$

[2, 2 marks]

Answer 9

(i) 17

(ii) $20x - 43$

(iii) 17 again

[2, 2, 1 marks]

Answer 10

(i) $9x^2 + 6x - 5$

(ii) $2, \frac{8}{3}$

[2, 2 marks]

Answer 11

- (i) show (ii) 3.5, 3

[2, 2 marks]

Answer 12

- (i) 22 (ii) -3
 (iii) $125z^2 - 23$ (iv) $20z^2 + 20z - 18$

[8 marks]

Answer 13

- (i) 4 (ii) 58
 (iii) $9z - 5$ (iv) $18z - 5$

[8 marks]

Answer 14

- (i) $\frac{15}{x-2} + 7$ (ii) $\frac{5}{3x+5}$

[2, 2 marks]

Answer 15

- (i) 1
 (ii) $12x - 23$
 (iii) 1 again

[2, 2, 1 marks]

Answer 16

- (i) $4x^2 - 20x + 33$
 (ii) 1, 4

[2, 2 marks]

Answer 17

- (i) show (ii) $1, \frac{2}{3}$

[2, 2 marks]

Answer 18

- (i) -5 (ii) -29
 (iii) $-120z - 65$ (iv) $30z^2 - 65$

[8 marks]