2.9 Factorising into Single Brackets: 1-hour Pack

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 (a) Factorise 28t + 24.
(b) Use your answer to (a) to work out the value of 28t + 24 when t = 4.

(3)

2 Factorise fully $7t^2$ - 6t.

(2)

3 Factorise fully $49a^2$ + 7a.

(2)

4 Factorise fully 9n + 36.

(2)

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5 Factorise each algebraic expression by taking out the common factor.

(a) Factorise 6x + 15x **(1)**

(b) Factorise 4y - 10y **(1)**

(c) Factorise 9a + 6b **(1)**

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6 (a) Factorise 42a + 54.
(b) Use your answer to (a) to work out the value of 42a + 54 when a = 15.

(3)

---

7 Factorise fully 8a + 24.

(2)

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8 (a) Factorise 25a + 10.
(b) Use your answer to (a) to work out the value of 25a + 10 when a = 5.

(3)

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9 (a) Factorise 12b + 42.
(b) Use your answer to (a) to work out the value of 12b + 42 when b = 4.

(3)

---

10 Factorise fully $p^2 + 8p$.

(2)

---

11 (a) Factorise 32n + 12.
(b) Use your answer to (a) to work out the value of 32n + 12 when n = 15.

(3)

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12 Factorise fully 63a + 54.

(2)

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13 (a) Factorise 40t + 24.
(b) Use your answer to (a) to work out the value of 40t + 24 when t = 6.

(3)

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14 Factorise fully 2n + 18.

(2)

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15 Factorise each expression by taking out the highest numeric factor.

(a) Factorise 63p + 21q **(1)**

(b) Factorise 50m - 20n **(1)**

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16 (a) Factorise 21t + 24.

(b) Use your answer to (a) to work out the value of 21t + 24 when t = 6.

(3)

---

17 Factorise fully b^2 - 2b.

(2)

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18 (a) Factorise 48t + 40.

(b) Use your answer to (a) to work out the value of 48t + 40 when t = 8.

(3)

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19 Factorise fully 40t + 24.

(2)

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Mark scheme · 2.9 Factorising into Single Brackets: 1-hour Pack

Question 1

a correct common factor taken out	M1
(a) 4(7t + 6)	A1
(b) 136	A1

Answer: **(a) 4(7t + 6), (b) 136**

Question 2

a correct common factor taken out (partial factorisation)	M1
t(7t - 6) cao	A1

Answer: **t(7t - 6)**

Question 3

a correct common factor taken out (partial factorisation)	M1
7a(7a + 1) cao	A1

Answer: **7a(7a + 1)**

Question 4

a correct common factor taken out (partial factorisation)	M1
9(n + 4) cao	A1

Answer: **9(n + 4)**

Question 5

(a) 3x(2 + 5) or 3x(7) not required but factor form 3x(2+5) oe	B1

(a) Answer: **3x(2 + 5)**

(b) 2y(2 - 5) oe	B1

(b) Answer: **2y(2 - 5)**

(c) 3(3a + 2b) oe	B1

(c) Answer: **3(3a + 2b)**

Question 6

a correct common factor taken out	M1
(a) 6(7a + 9)	A1
(b) 684	A1

Answer: **(a) 6(7a + 9), (b) 684**

Question 7

a correct common factor taken out (partial factorisation)	M1
8(a + 3) cao	A1

Answer: **8(a + 3)**

Question 8

a correct common factor taken out	M1
(a) 5(5a + 2)	A1
(b) 135	A1

Answer: **(a) 5(5a + 2), (b) 135**

Question 9

a correct common factor taken out	M1
(a) 6(2b + 7)	A1
(b) 90	A1

Answer: **(a) 6(2b + 7), (b) 90**

Question 10

a correct common factor taken out (partial factorisation)	M1
p(p + 8) cao	A1

Answer: **p(p + 8)**

Question 11

a correct common factor taken out	M1
(a) 4(8n + 3)	A1
(b) 492	A1

Answer: **(a) 4(8n + 3), (b) 492**

Question 12

a correct common factor taken out (partial factorisation)	M1
9(7a + 6) cao	A1

Answer: **9(7a + 6)**

Question 13

a correct common factor taken out	M1
(a) 8(5t + 3)	A1
(b) 264	A1

Answer: **(a) 8(5t + 3), (b) 264**

Question 14

a correct common factor taken out (partial factorisation)	M1
2(n + 9) cao	A1

Answer: **2(n + 9)**

Question 15

(a) 21(3p + q) cao	B1

(a) Answer: **21(3p + q)**

(b) 10(5m - 2n) cao	B1

(b) Answer: **10(5m - 2n)**

Question 16

a correct common factor taken out	M1
(a) 3(7t + 8)	A1
(b) 150	A1

Answer: **(a) 3(7t + 8), (b) 150**

Question 17

a correct common factor taken out (partial factorisation)	M1
b(b - 2) cao	A1

Answer: **b(b - 2)**

Question 18

a correct common factor taken out	M1
(a) 8(6t + 5)	A1
(b) 424	A1

Answer: **(a) 8(6t + 5), (b) 424**

Question 19

a correct common factor taken out (partial factorisation)	M1
8(5t + 3) cao	A1

Answer: **8(5t + 3)**

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