

Level 3 Algebra · Factorising

June 2013 - Question 2

Jan 2014 - Question 3

Jan 2015 - Question 2

June 2015 - Question 1

Jan 2016 - Question 3

June 2016 - Question 4

Jan 2017 - Question 1

June 2017 - Question 1

Jan 2018 - Question 1

June 2018 - Question 8

Jan 2019 - Question 1

June 2019 - Question 1

Jan 2020 - Question 1

Jan 2021 - Question 4

Jan 2022 - Question 3

June 2022 - Question 9

Jan 2023 - Question 2

June 2023 - Question 1

Jan 2024 - Question 9

2 (a) Factorise $x^2 + 8x + 15$

.....
(1)

(b) Factorise $4y^2 - 9$

.....
(1)

(c) Factorise $pt + 2p + 7t + 14$

.....
(2)

(Total for Question 2 is 4 marks)



3 (a) Expand and simplify $(2a - 3)(2a + 1)$

.....
(2)

(b) Factorise $9c^2d^2 - 24cd$

.....
(2)

(c) Factorise $100g^2 - 25h^2$

.....
(2)

(Total for Question 3 is 6 marks)



2 (a) Factorise $x^2 - 10x + 25$

.....
(1)

(b) Factorise $9 - 9y^2$

.....
(2)

(c) Factorise $vt + 3t - 2v - 6$

.....
(2)

(Total for Question 2 is 5 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1 (a) Factorise $24x^2y^2 + 12xy$

.....
(2)

(b) Factorise $ef - 4e + 3f - 12$

.....
(2)

(c) Factorise $x^2 - 16$

.....
(1)

(Total for Question 1 is 5 marks)



3 (a) Factorise $15c^3d + 35cd^2 + 20c^2d^2$

.....
(2)

(b) Factorise $ab - 2a - 4b + 8$

.....
(2)

(c) Factorise $3b^2 - 9b - 84$

.....
(2)

(Total for Question 3 is 6 marks)

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4 (a) Expand and simplify $(2x - 4)(x + 3)$

.....
(2)

(b) Factorise $10d^2e^2 + 15de^3$

.....
(2)

(c) Factorise $3p^2 - 12q^2$

.....
(2)

(Total for Question 4 is 6 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $d^2 - d - 12$

.....
(1)

(b) Factorise $mk + 2k - 3m - 6$

.....
(2)

(c) Factorise $2p^4 - 18p^2$

.....
(2)

(Total for Question 1 is 5 marks)

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $35x^2y^2 + 14xy$

.....
(2)

(b) Factorise $de - 3d + 3e - 9$

.....
(2)

(c) Factorise $4x^2 - 25$

.....
(1)

(Total for Question 1 is 5 marks)

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $20cd^2 - 15c^2d$

.....
(2)

(b) Factorise $5k^2 + 19k - 4$

.....
(2)

(Total for Question 1 is 4 marks)

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8 (a) Factorise $63x^2d + 9xd^2$

.....
(2)

(b) Factorise $4ab - 8b + 2a - 4$

.....
(3)

(c) Factorise $x^2 - 9t^2$

.....
(1)

(Total for Question 8 is 6 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $ab + bc - cd - ad$

.....
(2)

(b) Factorise $12r^2t - 9r^2t^3$

.....
(2)

(Total for Question 1 is 4 marks)

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $24w^2y^3 - 8wy^2$

.....
(2)

(b) Factorise $3ef - 3e + 2f - 2$

.....
(2)

(c) Factorise $25 - 4x^2$

.....
(1)

(Total for Question 1 is 5 marks)

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Expand and simplify $(x - y)(x + 2y)$

.....
(2)

(b) Factorise $12u^2t^2 + 18ut^3$

.....
(2)

(Total for Question 1 is 4 marks)

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4 (a) Factorise $y^2 - x^2$

.....
(1)

(b) Factorise $6xy - 8y + 9x - 12$

.....
(2)

(Total for Question 4 is 3 marks)



3 (a) Factorise $2wt + 6w - 5t - 15$

.....
(2)

(b) Factorise $8gh^3 - 6g^3h^2$

.....
(2)

(Total for Question 3 is 4 marks)

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9 (a) Factorise $6x^2y^2 - 9x^3y$

.....
(2)

(b) Factorise $p^4 - p^2q^2$

.....
(2)

(Total for Question 9 is 4 marks)

10 $x^2 + 6x + 13$ can be written in the form $(x + a)^2 + b$

(a) Find the value of a and the value of b .

$a =$

$b =$

(2)

The curve with equation $y = x^2 + 6x + 13$ has a turning point at the point A .

(b) Write down the coordinates of A .

.....
(1)

(Total for Question 10 is 3 marks)



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2 (a) Factorise $3a^2 - 6ac$

.....
(1)

(b) Factorise $12xy - 9y + 20x - 15$

.....
(2)

(c) Factorise $25e^2 - 36h^2$

.....
(1)

(d) Simplify $\frac{(w + 2)(3w - 6)}{(2w + 4)(w - 2)}$

.....
(2)

(Total for Question 2 is 6 marks)



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

You must NOT use a calculator.

1 (a) Factorise $21c^2d - 35cd^2$

.....
(2)

(b) Factorise $4k^2 + 10k - 6$

.....
(2)

(c) Expand and simplify $(w + 6)^2 + (w - 7)^2$

.....
(2)

(Total for Question 1 is 6 marks)

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9 (a) Factorise $10xy^3 + 15x^2y^2$

.....
(2)

(b) Factorise $p^2q^2 - q^2$

.....
(2)

(Total for Question 9 is 4 marks)

10 $x^2 + 8x + 11$ can be written in the form $(x + a)^2 + b$

(a) Find the value of a and the value of b .

$a =$

$b =$

(2)

The graph of $y = x^2 + 8x + 11$ has a turning point at the point T .

(b) Write down the coordinates of T .

.....
(1)

(Total for Question 10 is 3 marks)

