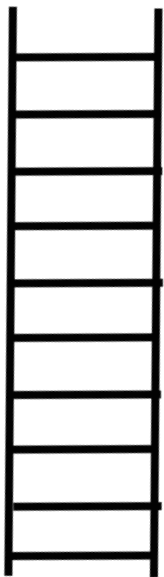**Name**

Key to Five

Unit 4: Brackets and Factorising

The PiXL Ladder to Success

- Exam style question
- Inequalities
- Factorising and solving quadratics
- DOTS
- Expanding double brackets
- Simple factorising
- Expanding single brackets
- Collecting terms

Section A
Question 1

Expand the following

y(y+2)

....
(Total 1 mark)

Question 2

Expand the following

a(b+c)

....
(Total 1 mark)

Question 3

Expand the following

-2(m+3)

....
(Total 1 mark)

Question 4

Expand the following

-5(p-2)

....
(Total 1 mark)

Question 5

Expand the following

3(t-1) + 5t

....
(Total 2 mark)

Key to Five

Question 6

Expand the following

3(d+2)+4(d-2)

....

(Total 2 mark)

Question 7

Expand the following

3(y+10)-2(y+5)

....

(Total 2 mark)

Question 8

Expand the following

c(v-3)

....

(Total 1 mark)

Question 9

Expand the following

$a^2(b^2+c^2)$

....

(Total 1 mark)

Question 10

Expand the following

$-2(m^2-3)$

....

(Total 1 mark)

Key to Five

Question 11

Expand the following

$-4(x^2+2x)$

....

(Total 1 mark)

Question 12

Expand the following

$-3(x^2-8) + 5x^2$

....

(Total 2 mark)

Question 13

Expand the following

$-3(x+5)-4(d-2)$

....

(Total 2 mark)

Question 14

Expand the following

$-3(c-10)-4(h-9)$

....

(Total 2 mark)

Section B

Question 15

Factorise $\quad\quad y^2 + 27y$

....
(Total 1 mark)

Question 16

Factorise $\quad\quad 10x - 15$

....
(Total 1 mark)

Question 17

Factorise $\quad\quad 3f + 9$

....
(Total 1 mark)

Question 18

Factorise $\quad\quad 2x^2 - 10$

....
(Total 1 mark)

Question 19

Factorise $\quad\quad 18a^2 - 34$

....
(Total 1 mark)

Question 20

Factorise $\quad\quad 8y^2 - 16$

....
(Total 1 mark)

Question 21

Factorise $\quad\quad 3x+6$

....
(Total 1 mark)

Key to Five

Question 22

Factorise $\qquad$ 8s+2t

....

(Total 1 mark)

Question 23

Factorise $\qquad$ ac-c

....

(Total 1 mark)

Question 24

Factorise $\qquad$ $4x^2+3x$

....

(Total 1 mark)

Question 25

Leyla completed her maths homework but made some errors. She was asked to fully factorise each expression.

Underline the errors and rewrite each question with the correct solution
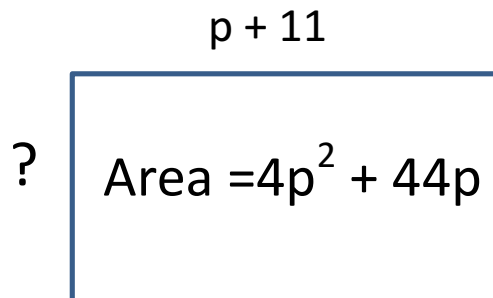
(a) $18y^2 + 24y^3 = 3y(6y + 8y^2)$

.... **(2)**

(b) $60x^4 + 45x^7 = 15x(4x^3 - 3x^6)$

.... **(2)**

(Total 4 marks)

Key to Five

Question 26

Find the missing side of the rectangle.

p + 11

? $Area = 4p^2 + 44p$

(Total 1 mark)

Question 27

Factorise the following and simplify your answers when possible:-

(a) y(y - 5) + 9y

(2)

(b) s(s + t) - t(s + t)

(1)

....

(Total 2 marks)

Question 28

Factorise and simplify

0.45 x 90.2 + 9.02 x 5.5

....

(Total 2 marks)

Section C

Question 29
Draw diagrams to represent these inequalities.

    (a) $x \leq 3$

    (b) $x > -2$

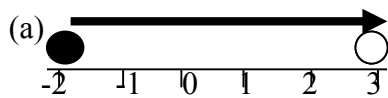..

(2)

Question 30
$-3 \leq n < 2$

n is an integer

Write down all the possible values of n and represent these values on a number line.

....

(3)

Question 31

Write down the inequality that is represented by each diagram below.

(a)   (b)

....
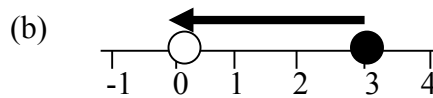
(4)

Question 32
Explain the difference between $x > 0$ and $x \geq 0$ and represent them on separate number lines.

(3)

Question 33

Decide whether these statements true or false and justify your answers.

    (a) To represent greater than we use the > symbol

(2)

    (b) To represent less than or equal to we use the $\geq$ symbol

(2)

Key to Five

Question 34

I think of an integer which is less than 6 but greater than or equal to 3.

List all the possible solutions and represent them on a number line as a linear inequality.

(3)

(c) Which of these inequalities (a) or (b) has the most integer solutions?

....

(1)

9