

Q1. The expression  $\frac{x^2 - 9}{x^2 + bx - 15}$  simplifies to  $\frac{x+3}{x+5}$

Work out the value of  $b$ .

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$b =$  .....

(Total 3 marks)

Q2.

(a) Show that  $\frac{c^2 + 5c + 4}{3c + 3}$  simplifies to  $\frac{c + 4}{3}$

(3)

(b) Hence, or otherwise, simplify fully  $\frac{c^2 + 5c + 4}{3c + 3} + \frac{3 - 2c}{6}$

Answer .....

(2)  
(Total 5 marks)

**Q3.** Here is an identity  $(3x + c)(x + c) \equiv 3x^2 - dx + 16$

$c$  and  $d$  are integers.

Work out all possible pairs of values of  $c$  and  $d$ .

You **must** show your working.

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Answer .....

(Total 5 marks)