**GCSE – A Level Bridging Materials 3**

**Harder Questions, to get your brains working again after the summer! These are mainly A or A\* questions**

**1.** (a) (ii) Factorise 2*x*2 – 35*x* + 98

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(ii) Solve the equation 2*x*2 – 35*x* + 98 = 0

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(3)

**2.** Make *x* the subject

5(*x* – 3) = *y*(4 – 3*x*)

*x* = ..................................

(Total 4 marks)

**3.** Solve the equation



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(Total 7 marks)

**4.** Solve the simultaneous equations

*x*2 + *y*2 = 29

*y* – *x* = 3

x = ..................................

y = ..................................

(Total 7 marks)

**5.** (a) Find the equation of the straight line which passes through the point (0, 3) and is perpendicular to the straight line with equation *y* = 2*x*.

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(2)

The graphs of *y* = 2*x*2 and *y* = *mx* – 2 intersect at the points *A* and *B*. The point *B* has coordinates (2, 8).



(b) Find the coordinates of the point *A*.

(........, ........)

(Total 4 marks)

**6.** (a) Evaluate

(i) 3–2

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(ii) 

…………………………

(iii) 

…………………………

(iv) 

…………………………

(5)

**7.** Peter cuts a square out of a rectangular piece of metal.



The length of the rectangle is 2*x* + 3.  
The width of the rectangle is *x* + 4.  
The length of the side of the square is *x* + 2.  
All measurements are in centimetres.

The shaded shape in the diagram shows the metal remaining.

The area of the shaded shape is 20 cm2.

1. Show that *x*2 + 7*x* – 12 = 0

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(4)

(b) (i) Solve the equation *x*2 + 7*x* – 12 = 0  
Give your answers correct to 4 significant figures.

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(3)

(ii) Hence, find the perimeter of the square.  
Give your answer correct to 3 significant figures.

…………………….. cm

(1)

(Total 8 marks)