| A | Nat 5 September Revision | 38 |
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| 1 | There are 984 pupils on the school roll for Banchory High School. It is forecast that the school roll will decrease by 10% per year for the next three years.<br>What is the expected school roll after three years?<br>Give your answer rounded to the nearest ten. | 3 |
| 2 | Multiply out the brackets and collect like terms $(x + 2)(4x^2 - 5x - 1)$ | 3 |
| 3 | Solve the inequality $5 - (2x - 1) < 15$ | 2 |
| 4 | <br>In this diagram:<br>O is the centre of the circle<br>BP is a diameter<br>CPR is a tangent to the circle<br>Angle BCP is $51°$<br>Calculate the size of angle EPR. | 3 |
| 5 | For a Scottish election a tally was taken of the number of people who voted per hour for the first nine hours.<br>The results for a polling station in Arran are as follows<br><br>22  24  30  35  39  44  45  50  53<br><br>(a) Calculate the median and semi-interquartile range for this data | 2 |
|  | At the same time a tally was taken in Dundee. The median number of people voting per hour was 59 and the SIQR was 8.<br><br>(b) Make two comparisons between the data recorded at both polling stations | 2 |
| 6 | Express $\frac{3}{x} + \frac{4}{x+1}$, $x \neq 0, x \neq -1$ as a single fraction in the simplest form | 3 |
| 7 | Change the subject of the formula $H = \sqrt{2t - a}$ to $t$ | 3 |

| 8 | 5 chocolate bars and 6 bags of sweets cost £7.37 | |
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| | (a) Write down an equation to illustrate this information. | 1 |
| | 3 chocolate bars and 2 bags of sweets cost £3.59 | |
| | (b) Write down an equation to illustrate this information. | 1 |
| | (c) Calculate the cost of one chocolate bar and one bag of sweets. | 4 |

| 9 | | |
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| | Teams in a school quiz answer questions on film and sport. The scattergraph shows the scores of some of the teams. A line of best fit is drawn as shown.  | |
| | (a) Find the equation of the line of best fit. Give your answer in the simplest form. | 3 |
| | (b) Use your answer from part (a) to estimate sports score for a team with a film score of 8. | 1 |

| 10 | The shape shown is part of a circle with a centre O. | |
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| | The circle has radius of 13 centimetres. AB is a chord of length 20 centimetres. | |
| | Calculate the width of the shape.  | 4 |

| 11 | A straight line has equation $3x - 5y - 10 = 0$. | |
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| | Find the gradient of this line and the $y$-intercept of this line. | 3 |