



# education

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Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL SENIOR CERTIFICATE, GRADE 10 - 2006**

## **MARKING MEMORANDUM**

**MATHEMATICS P3 – Extension Paper**

**OCTOBER/NOVEMBER 2006**

**This question paper consists of 5 pages.**

QUESTION 1		
Event A	50-50 chance	vv correct answer
Event B	certain	vv correct answer
Event C	cannot tell	vv correct answer
Event D	impossible	vv correct answer
		Total: 8 marks
QUESTION 2		
2.1	<p>S</p>	<ul style="list-style-type: none"> <li>v 36 mathematics</li> <li>v 32 in intersection</li> <li>v 18 physical science</li> <li>v 44 outside sample space</li> </ul> <p style="text-align: right;">(4)</p>
2.2.1	$P(\text{takes PS}) = \frac{50}{130} = \frac{5}{13}$	<ul style="list-style-type: none"> <li>vv correct probability</li> </ul> <p style="text-align: right;">(2)</p>
2.2.2	$P(\text{takes only M}) = \frac{36}{130} = \frac{18}{65}$	<ul style="list-style-type: none"> <li>vv correct probability</li> </ul> <p style="text-align: right;">(2)</p>
2.2.3	$  \begin{aligned}  P(\text{M or PS}) &= P(\text{M}) + P(\text{PS}) - P(\text{M and PS}) \\  &= \frac{68}{130} + \frac{50}{130} - \frac{32}{130} \\  &= \frac{86}{130} = \frac{43}{65}  \end{aligned}  $ <p style="text-align: center;">OR</p> $P(\text{M or PS}) = \frac{36 + 32 + 18}{130} = \frac{86}{130} = \frac{43}{65}$ <p style="text-align: center;">OR</p> $P(\text{M or PS}) = 1 - \frac{44}{130} = \frac{43}{65}$	<ul style="list-style-type: none"> <li>v formula</li> <li>v substitution</li> <li>vv answer</li> </ul> <p style="text-align: right;">(4)</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>v formula</li> <li>v substitution</li> <li>vv answer</li> </ul> <p style="text-align: right;">(4)</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>v formula</li> <li>v substitution</li> <li>vv answer</li> </ul> <p style="text-align: right;">(4)</p>
		Total: 12 marks

<b>QUESTION 3</b>		
3.1	15	v answer (1)
3.2.1	$P(E_1) = \frac{7}{15}$	v correct probability (1)
3.2.2	$P(E_4) = \frac{3}{15} = \frac{1}{5}$ (0,2)	v correct probability (1)
3.2.3	$P(\bar{E}_2) = \frac{10}{15}$	v correct answer (1)
3.2.4	$P(\bar{E}_4) = \frac{12}{15}$	v correct answer (1)
3.2.5	$P(E_1 \text{ or } E_4) = P(E_1) + P(E_4) - P(E_1 \text{ and } E_4)$ $= \frac{5}{15} + \frac{3}{15} - \frac{0}{15}$ $= \frac{10}{15}$	v correct formula v correct substitution v answer (3)
3.2.6	$P(E_2 \text{ and } E_3) = P(E_2).P(E_3)$ $= \frac{5}{15} \times \frac{3}{15}$ $= \frac{15}{225} = \frac{1}{15}$	v correct formula v correct substitution v answer (3)
Total: 11 marks		
<b>QUESTION 4</b>		
4.1	Gaining  From May to August the percentage voters choosing John Mofokeng increased from 24% to 49%.	v answer  v explanation (2)
4.2	John's support is decreasing.  Months not in chronological order.	v impression  v answer (2)
4.3	Yes.  Because the opposition party wants to give a picture that their own candidate is gaining voter support.	v yes  vv explanation (3)

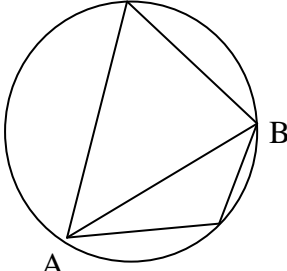
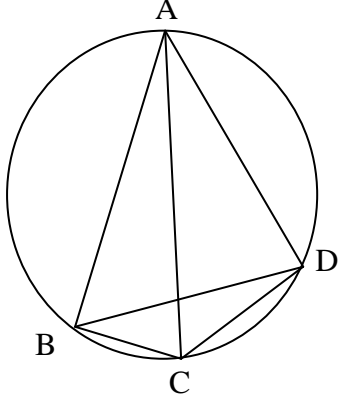
<p>4.4</p>		<p>v axes</p> <p>v plotted points</p> <p>v graph</p> <p style="text-align: right;">(3)</p>
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Total: 10 marks

**QUESTION 5**

<p>5.1</p>	<p>True *</p> <p> <math>AB = AC</math> (given)  <math>\hat{B} = \hat{C}</math> (<math>\angle</math>'s opp = sides)              but <math>AB = BC</math> (given)  <math>\therefore \hat{A} = \hat{C}</math> (<math>\angle</math>'s opp = sides)  <math>\therefore \hat{A} = \hat{B} = \hat{C}</math> </p>	<p>v true</p> <p>v <math>\angle</math>'s opp = sides</p> <p>v conclusion</p> <p style="text-align: right;">(3)</p> <p><i>Any other mathematically valid argument/proof may be accepted</i></p>
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<p>5.2</p>	<p>False *</p> <p>opposite equal sides of a quadrilateral produced may meet and cut each other, but in a parallelogram a pair of equal opposite sides are also // and will never meet.</p> <p>For ex. Quadrilateral ABCD with sides AB and DC produced will cut each other and parallelogram EFGH with opposite sides that will not cut</p>	<p>v false</p> <p>v opp, equal sides</p> <p>v sides //<sup>m</sup></p> <p style="text-align: right;">(3)</p> <p><i>Any other mathematically valid argument/proof may be accepted</i></p>
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<p>5.3</p>	<p>False * a diagonal is a chord, not necessarily a diameter.</p> <p>For ex.</p>  <p>A</p> <p>Diagonal AB is a chord, not a diagonal</p> <p>For ex.</p>  <p>A</p> <p>B</p> <p>C</p> <p>D</p>	<p>v false v chord v not diameter (3)</p> <p><i>Any other mathematically valid argument/proof may be accepted</i></p>
<p>Total: 10 marks</p>		