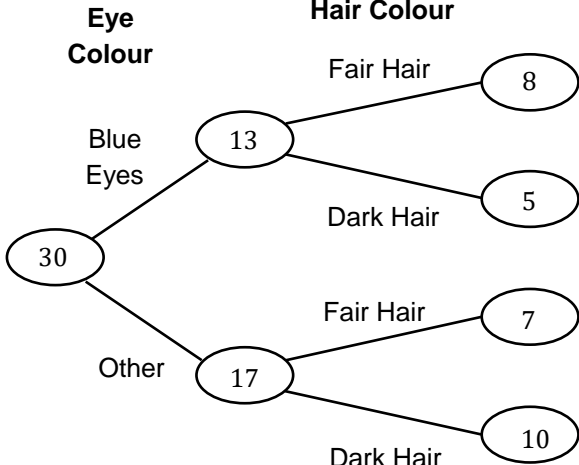
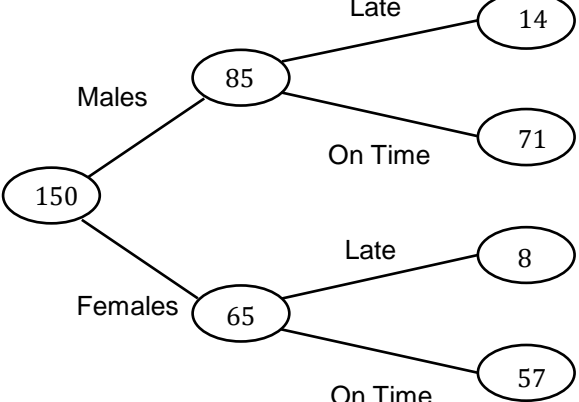
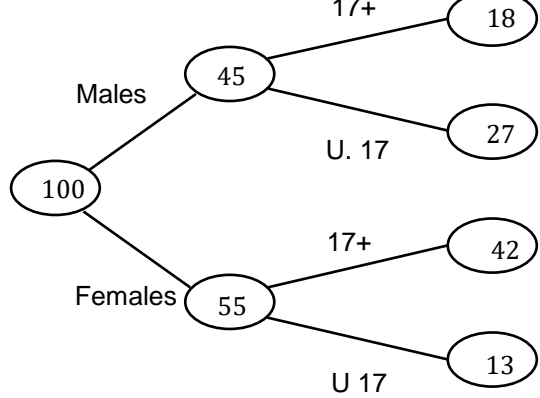
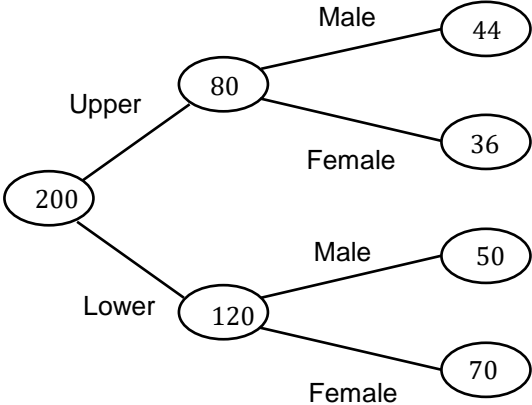
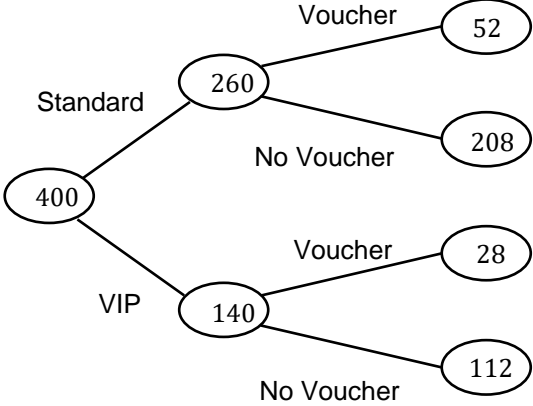
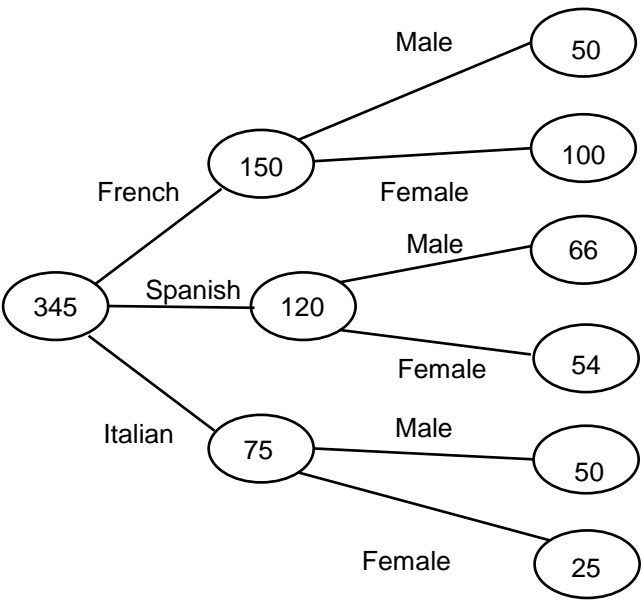


Frequency Trees - Mark Scheme																		
<p>1(a)</p>	<table border="1"> <thead> <tr> <th></th> <th>Fair hair</th> <th>Dark hair</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Blue eyes</td> <td>8</td> <td>5</td> <td>13</td> </tr> <tr> <td>Other</td> <td>7</td> <td>10</td> <td>17</td> </tr> <tr> <td>TOTAL</td> <td>15</td> <td>15</td> <td>30</td> </tr> </tbody> </table>		Fair hair	Dark hair	TOTAL	Blue eyes	8	5	13	Other	7	10	17	TOTAL	15	15	30	<p>[1] for two correct values [1] for three correct values [1] all correct</p>
	Fair hair	Dark hair	TOTAL															
Blue eyes	8	5	13															
Other	7	10	17															
TOTAL	15	15	30															
<p>1(b)</p>		<p>[1] for two correct values [1] for four correct values [1] all correct</p>																
<p>2(a)</p>		<p>[1] for 150, 85, 14 and 8 all being correct [1] [1] [1] Award one mark for each further correct answer</p>																
<p>2(b)</p>	$\frac{57}{150}$	<p>[1] Or value given in part (a) for female-on time divided by 150 – error carried forward</p>																
<p>3(a)</p>		<p>[1] for correct labels [1] for 100, 45 and 13 in correct places [1] for calculating 55 and 42 [1] for 27 [1] for 18</p>																

Turn over ►

3(b)	27 + 13 = 40 members that are under 17	[1] for sum of value given on u17 branches in part (a)
	$\frac{40}{100} \times 100 = 40\%$	[1]
4	 <pre> graph LR A((200)) --- B[Upper] A --- C[Lower] B --- D((80)) C --- E((120)) D --- F[Male] D --- G[Female] E --- H[Male] E --- I[Female] F --- J((44)) G --- K((36)) H --- L((50)) I --- M((70)) </pre>	<p>[1] for labelling frequency tree</p> <p>[1] mark for 200 and 120</p> <p>[1] mark for 80</p> <p>[1] mark for 36</p> <p>[1] mark for 50 or 70</p> <p>[1] Full marks if all cells correct with correct labels</p>
5	 <pre> graph LR A((400)) --- B[Standard] A --- C[VIP] B --- D((260)) C --- E((140)) D --- F[Voucher] D --- G[No Voucher] E --- H[Voucher] E --- I[No Voucher] F --- J((52)) G --- K((208)) H --- L((28)) I --- M((112)) </pre>	<p>[1] mark for 400 and 140</p> <p>[1] mark for 260</p> <p>[1] mark for 28</p> <p>[1] mark for 52</p>
5(b)	10% off is £4.50 or £6.30	[1] mark for £4.50 or £6.30
	<p>Sales without vouchers</p> $= 208 \times £5 + 112 \times £7 = £1824$	[1] Correct calculation
	<p>Sales with vouchers</p> $= 52 \times £4.50 + 28 \times £6.30 = £410.40$	[1] Correct calculation
	£2234.20	[1] All 4 marks for correct answer

Turn over ►

6(a)	 <pre> graph LR A((345)) --- B[French] A --- C[Spanish] A --- D[Italian] B --- E((150)) C --- F((120)) D --- G((75)) E --- H[Male] E --- I[Female] F --- J[Male] F --- K[Female] G --- L[Male] G --- M[Female] H --- N((50)) I --- O((100)) J --- P((66)) K --- Q((54)) L --- R((50)) M --- S((25)) </pre>	<p>[1] 50 and 100 correct</p> <p>[1] 66 and 54 correct</p> <p>[1] 50 and 25 correct</p> <p>[1] All correct</p>
6(b)	There is a total of 166 male students.	[1]

END