

Vak

Question 1

- 1.1 6 ✓ ①
- 1.2.1 $P[A \text{ and } B] = P(A) + P(B) - P(A \cup B)$
 $= 0,3 + 0,5 - 0,65 = 0,15$ ✓ ③
- 1.2.2 $P(A) \times P(B) = P(A \text{ and } B)$
 $0,3 \times 0,5 = 0,15$ ✓ ②
- 1.3 Shaded Area: $50^2 - 1125^2 = 536,504...$
 Total Area: $50^2 = 2500$ ✓
 $P[\text{shaded}] = \frac{536,504...}{2500} = 0,21$ ✓ ④

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Question 2

- 2.1 on diagram sheet ⑦
- 2.2.1 $\frac{19}{125}$ ✓ ①
- 2.2.2 $\frac{185}{250} = \frac{37}{50}$ ✓ ③
- 2.2.2 $\frac{8427}{250} = \frac{7}{50}$ ✓ ③

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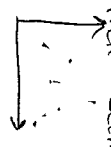
Question 3

- 3.1 on diagram sheet ④
- 3.2 $0,55 \times 0,46 = 0,22$ ✓ ②
- 3.3 $0,45 \times 0,76 \times 0,9 = 0,28$ ✓ ③
- 3.4 Dependant ✓
- The probability of prepaid is dependant on which network is chosen. ✓ ②

11

Question 4

- 4.1 $\frac{3861}{7} = 565,86$ ✓ ②
- 4.2 520,5 ✓, average lower by about 8%. ②
- 4.3 any relevant ✓ ②
- e.g. increase and then decrease / no defined trend



6

Question 5

- 5.1 Yes, values and corresponding gears same on all graphs. ②
- 5.2 2 and 3 imply no big increase, or even implied decrease. Graph 1 shows a nice increase. ①
- 5.3 Graph 1, shows increase. ②

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Question 6

- 6.1 $8850 - 2950 - 2950 = 2950$ ✓
 \therefore outside 2sd = 4%. ✓ ③ or any acceptable method.
- 6.2 11806 is 1sd above mean. ✓
 $\therefore 100\% - 68\% = 32\%$ ✓ ③ or any acceptable.
- 6.3 No, since some earn below threshold. OR
 Yes, Fair as some work longer than others. ②

8

Question 7

7.1 $4x + 60 = 180^\circ$ (opp. \angle 's cyclic quad)

$4x = 120$

$x = 30^\circ$

$3y + y = 180^\circ$ (opp \angle 's cyclic quad)

$4y = 180$

$y = 45$ ✓

(5)

7.2 $OB = 5$ units (radius)

$\therefore OD = 2$ units (OC = radius = 5)

$\therefore DB = \sqrt{21}$ (Pythag)

$\therefore AB = 2\sqrt{21}$ (radius chord, $AO = OB$)
 $= 9.17$ ✓

(6)

[11]

Question 8

8.1 $M\hat{N}O = 2x$ (alt \angle 's $MN \parallel ST$)

$\therefore N\hat{O}T = 3x$ (ext \angle of Δ)

$\therefore N\hat{O}T = P\hat{1}Q = 3x$ ✓

$\therefore SN \parallel TP$ (corresponding angles =)

(5)

8.2 $STM = x$ (alt \angle 's) ✓

$M\hat{T}P = (180 - 3x)$ (CO-INT \angle 's) ✓

$\therefore x + (180 - 3x) + 110 + 3x = 360^\circ$ (\angle 's in Σ)

(4)

[9]

Question 9

9.1 $RTSP$, all vertices on circumference. (2)

9.2 $x = 274^\circ$ (\angle @ centre = $2\angle$ @ circum)

$y = 86^\circ$ (\angle of reflection)

$z = 43^\circ$ (\angle @ centre = $2\angle$ @ circum)

$w = 43^\circ$ (\angle in same segment)

(8)

[10]

Question 10

10.1 $B_2 = C_1$ (chord-tangent)

and $C_1 = \hat{A}$ (alt \angle 's)

$\therefore B_2 = \hat{A}$ (5)

10.2 $D_3 = C_3 = B_1 + B_2$ (tan chord, alt \angle 's)

$\therefore B_1 + B_2 = D_3$ (5)

10.3 $B_1 + B_2 = D_3$ (paren)

and $B_1 + B_2 = D_1$ (ext \angle cyclic quad)

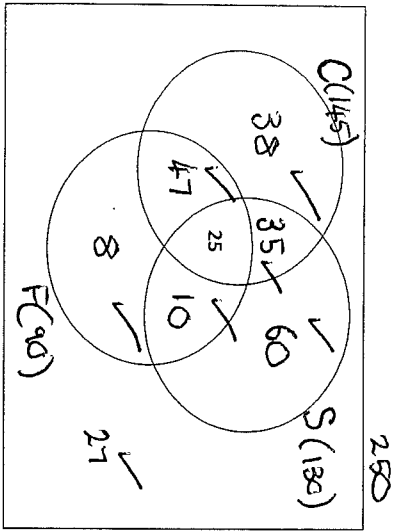
$\therefore D_1 = D_3$ (4)

[14]

100.

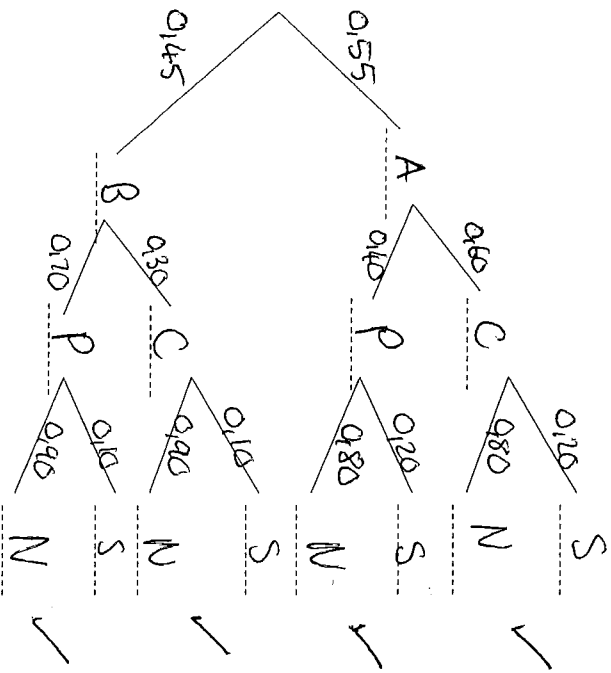
Diagram sheet 1 – THIS SHEET MUST BE HANDED IN WITH YOUR ANSWERS

Question 2.1



Question 3

3.1



(4)