Topic: Simple Probability and Possibility diagram - P1

Marks: / 15 Grade: Time: 25 Minutes

Name: Class: Date:

1

Four cards are marked with the numbers 1, 2, 3 and 4.
One card is chosen at random.
A second card is then chosen, at random, from the remaining three cards.
The sum of the numbers on the two chosen cards is calculated.

(a) Complete the table to show the possible outcomes.

Second card \ First card	1	2	3	4
1				
2				
3				
4				

[1]

(b) What is the probability that the sum is less than 2?

Answer ..... [1]

(c) What is the probability that the sum is greater than 5?

Answer ..... [1]

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2

2	3	3	4	4	4

The numbers 2, 3, 3, 4, 4, 4 are written on six cards.
Two cards are chosen, at random, without replacement, to form a 2-digit number.
The first card chosen shows the number of Tens.
The second card chosen shows the number of Units.

First card	Second card
☐	☐
Tens	Units

Expressing each answer in its simplest form, find the probability that the two cards show

(a) a number greater than 20,

Answer ..... [1]

(b) the number 33,

Answer ..... [1]

(c) the number 43 or the number 32.

Answer ..... [2]

3

Three cards, A, B and C are marked with the numbers 2, 3 and 4 respectively.
One card is chosen, at random.
A second card is then chosen, at random, from the remaining two cards.
The sum of the numbers on the two chosen cards is calculated.

(a) What is the probability that the sum is 3?

Answer .....[1]

(b) Complete the table to show all the possible outcomes.
You may not need all the columns. [1]

First card	A								
Second card	B								
Sum	5								

(c) What is the probability that the sum is 7?

Answer .....[1]

4

A bag contains red counters, blue counters and yellow counters.
There are 60 counters in the bag.

The probability that a counter taken at random from the bag is red is $\frac{2}{5}$.

The probability that a counter taken at random from the bag is blue is $\frac{5}{12}$.

How many yellow counters are in the bag?

Answer..... [2]

5

A bag contains red, green and yellow pegs.
A peg is taken at random from the bag.
The probability that it is red is 0.35 and the probability that it is green is 0.4.

(a) Find the probability that it is

(i) yellow,

(ii) not red.

(b) Originally there were 16 green pegs in the bag.
Find the total number of pegs.

Answer (*a*)(i) .....[1]

(ii) .....[1]

(*b*) .....[1]

Topic: Probability and Possibility diagram - P1 (Marking Scheme)

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1	(a)	<table><tr><td>–</td><td>3</td><td>4</td><td>5</td></tr><tr><td>3</td><td>–</td><td>5</td><td>6</td></tr><tr><td>4</td><td>5</td><td>–</td><td>7</td></tr><tr><td>5</td><td>6</td><td>7</td><td>–</td></tr></table>	1	
	(b)	0	1	
	(c)	$\frac{4}{12}$ oe ; or FT *their table*	1√	
2	(a)	1	1	
	(b)	$\frac{1}{15}$	1	
	(c)	$\frac{4}{15}$	2	**M1** for $\frac{3}{6}\times\frac{2}{5}\times\frac{2}{6}\times\frac{1}{5}$ oe or for any complete possibility diagram such as the one below, **correctly used**. <table><tr><td></td><td>2</td><td>3</td><td>3</td><td>4</td><td>4</td><td>4</td></tr><tr><td>2</td><td>–</td><td>23</td><td>23</td><td>24</td><td>24</td><td>24</td></tr><tr><td>3</td><td>32</td><td>–</td><td>33</td><td>34</td><td>34</td><td>34</td></tr><tr><td>3</td><td>32</td><td>33</td><td>–</td><td>34</td><td>34</td><td>34</td></tr><tr><td>4</td><td>42</td><td>43</td><td>43</td><td>–</td><td>44</td><td>44</td></tr><tr><td>4</td><td>42</td><td>43</td><td>43</td><td>44</td><td>–</td><td>44</td></tr><tr><td>4</td><td>42</td><td>43</td><td>43</td><td>44</td><td>44</td><td>–</td></tr></table>
3	(a)	0	1	
	(b)	<table><tr><td>A</td><td>A</td><td>B</td><td>B</td><td>C</td><td>C</td></tr><tr><td>B</td><td>C</td><td>A</td><td>C</td><td>A</td><td>B</td></tr><tr><td>5</td><td>6</td><td>5</td><td>7</td><td>6</td><td>7</td></tr></table>	1	
	(c)	$\frac{1}{3}$ $\frac{\text{their (number of 7s)}}{\text{total no. of outcomes}}$ or f.t from table provided (number of 7s) > 0	1√	
4		11	2	**B1** for answer $\frac{11}{60}$ Or $\frac{5}{12}\times 60$ **and** $\frac{2}{5}\times 60$ soi
5		(ai) 0.25	1	
		(aii) 0.65	1	
		(b) 40	1	