Can Monkeys Write Shakespeare?

NAME: .....

CLASS: .....

DATE: .....

Basic

1) Where would you place the following statements on the probability scale below?

a) If today is Monday yesterday was Friday.

b) The next person I see will be male.

c) There will be snow in July in England.

d) If today is Wednesday, tomorrow will be Thursday.

2) a) What is the probability of each outcome when a coin is tossed?

b) What is the sample space when a coin is tossed?

3) A spinner has four equal sectors coloured yellow, blue, green and red.
a) What is the probability of landing on each colour after spinning the spinner?

b) What is the sample space in this experiment?

4) The probability of an event happening is said to be 37. What is the probability of the event not happening?

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Core

1) a) What is the probability of landing a three when a single six-sided die is rolled?

b) What is the sample space in the above experiment?

2) a) What is the probability of selecting a jack from a pack of playing cards?

b) What is the probability of not selecting a jack from a pack of playing cards?

3) One dart is thrown at a dartboard numbered 1–20. If the dart actually lands on the board,
a) What is the probability that it lands on 16?

b) What is the probability that it lands on a number over 14?

c) What is the probability that it lands on an odd number?

d) What is the probability that it lands on a prime number?

4) A bag contains 20 marbles: 5 each of red, blue, white and black. A marble is picked at random. What is the probability that it is:
a) white? b) red or blue? c) not black? d) yellow?

5) In a science test, the following marks were recorded: 5, 8, 10, 4, 5, 5, 6, 10, 5, 8, 5, 7, 4, 9, 7, 5, 3, 6, 2, 9.
a) What is the probability that a student, chosen at random from this group, obtained a mark higher than 7 in their test?

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Advanced

1) If one card is drawn at random from a full pack of playing cards, what is the probability of drawing:

a) a heart?

b) a card that is not a heart?

c) a king?

d) a card that is not a king?

2) a) $(x^3)^2$ =

b) $(x^4)^2$ =

c) $(x^3)^3$ =

d) $(y^4)^3$ =

e) $(y^3)^4$ =

f) $(y^6)^5$ =

g) $(3x^4)^2$ =

h) $(5x^2)^2$ =

i) $(4x^5)^4$ =

j) $(10x^3)^4$ =

k) $(3x^3)^5$ =

l) $(-2x^4)^6$ =

3) Complete the following table with the correct fraction, percentage or decimal:

Fraction	Percentage	Decimal
$\frac{1}{2}$		
	60%	
	10%	**0.1**
$\frac{1}{3}$		
		0.2
	80%	

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ANSWERS

Basic

1) a) Impossible **b) Evens** **c) Unlikely** **d) Certain**

2) a) P(head) = $\frac{1}{2}$ **P(tails) =** $\frac{1}{2}$

b) {heads, tails}

3) a) P(yellow) = $\frac{1}{4}$ **P(blue) =** $\frac{1}{4}$ **P(green) =** $\frac{1}{4}$ **P(red) =** $\frac{1}{4}$

b) {yellow, blue, green, red}

4) $\frac{4}{7}$

Core

1) a) P(3) = $\frac{1}{6}$ **b) {1,2,3,4,5,6}**

2) a) P(Jack) = $\frac{4}{52} = \frac{1}{13}$ **b) P(not Jack) =** $\frac{48}{52} = \frac{12}{13}$

3) a) P(16) = $\frac{1}{20}$ **b) P(>14) =** $\frac{6}{20} = \frac{3}{10}$

c) P(odd) = $\frac{10}{20} = \frac{1}{2}$ **d) P(prime) =** $\frac{8}{20} = \frac{2}{5}$

4) a) P(white) = $\frac{5}{20} = \frac{1}{4}$ **b) P(red or blue) =** $\frac{10}{20} = \frac{1}{2}$

c) P(not black) = $\frac{15}{20} = \frac{3}{4}$ **d) P(prime) = P(yellow) = 0 (impossible)**

5) a) P(>7) = $\frac{6}{20} = \frac{3}{10}$

Advanced

1) a) P(heart) = $\frac{13}{52} = \frac{1}{4}$ **b) P(not heart) =** $\frac{39}{52} = \frac{3}{4}$

c) P(king) = $\frac{4}{52} = \frac{1}{13}$ **d) P(not king) =** $\frac{48}{52} = \frac{12}{13}$

2) a) x^6 **b)** x^8 **c)** x^9

d) y^{12} **e)** y^{12} **f)** y^{30}

g) $9x^8$ **h)** $25x^4$ **i)** $256x^{20}$

j) $10{,}000x^{12}$ **k)** $243x^{15}$ **l)** $64x^{24}$

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ANSWERS

Advanced

3)

Fraction	Percentage	Decimal
$\frac{1}{2}$	**50%**	**0.5**
$\frac{3}{5}$	**60%**	**0.6**
$\frac{1}{10}$	**10%**	**0.1**
$\frac{1}{3}$	**$33\frac{1}{3}$ %**	**0.33**
$\frac{1}{5}$	**20%**	**0.2**
$\frac{4}{5}$	**80%**	**0.8**