

COUNTING & PROBABILITY (Q 6, PAPER 2)

LESSON NO. 3: SIMPLE PROBABILITY

2007

6 (a) One letter is chosen at random from the letters of the word EUCLID.

(i) Find the probability that the letter chosen is D.

(ii) Find the probability that the letter chosen is a vowel.

SOLUTION

6 (a) (i)

$$p(\mathbf{D}) = \frac{\text{No. of D's}}{\text{No. of letters}} = \frac{1}{6}$$

$$p(E) = \frac{\text{Number of desired outcomes}}{\text{Total possible number of outcomes}} \dots\dots \mathbf{4}$$

6 (a) (ii)

$$p(\mathbf{Vowel}) = \frac{\text{No. of vowels}}{\text{No. of letters}} = \frac{2}{6} = \frac{1}{3}$$

2003

6 (a) I write down today's date as 09062003 and then select one of the digits at random.

(i) What is the probability that I select the 9?

(ii) What is the probability that I select an odd digit?

SOLUTION

6 (a) (i)

$$p(E) = \frac{\text{Number of desired outcomes}}{\text{Total possible number of outcomes}} \dots\dots \mathbf{4}$$

There are 8 digits in total. There is one 9.

$$p(\text{Selecting a 9}) = \frac{\text{No. of 9's}}{\text{No. of digits}} = \frac{1}{8}$$

6 (a) (ii)

$$p(\text{Selecting an Odd Digit}) = \frac{\text{No. of Odd Digits}}{\text{No. of digits}} = \frac{2}{8} = \frac{1}{4}$$

1998

- 6 (a) One letter is chosen at random from the letters of the word LEAVING.
- (i) Find the probability that the letter chosen is L.
- (ii) Find the probability that the letter chosen is a vowel.

SOLUTION

6 (a) (i)

$$p(E) = \frac{\text{Number of desired outcomes}}{\text{Total possible number of outcomes}} \dots\dots \textcircled{4}$$

$$p(\mathbf{L}) = \frac{\text{No. of L's}}{\text{No. of letters}} = \frac{1}{7}$$

6 (a) (ii)

$$p(\text{Vowel}) = \frac{\text{No. of vowels}}{\text{No. of letters}} = \frac{3}{7}$$