

Name: _____ No. ____ M.4/____

Probability: Probability That An Event Does Not Happen

$$P(\text{not } A) = 1 - P(A \text{ does happen})$$

1. A card is drawn at random from an ordinary pack of playing cards. What is the probability that it is not three?

Solution $P(\text{a three}) = \frac{\text{number of choices that are threes}}{\text{total number of possible choices}} = \text{---} = \text{---}$

$$P(\text{not a three}) = 1 - \text{---}$$

$$= \text{---} = \text{---}$$

Answer: —

2. One letter is chosen at random from English alphabet. What is the probability that it is not a vowel?

Solution

$$P(\text{a vowel}) = \frac{\text{number of choices that are vowels}}{\text{total number of possible choices}}$$

$$P(\text{a vowel}) = \underline{\quad}$$

$$P(\text{not a vowel}) = 1 - \underline{\quad}$$

$$= \underline{\quad} - \underline{\quad}$$

$$= \underline{\quad}$$

Answer: $\underline{\quad}$

3. A number is chosen at random from the first 20 natural numbers. What is the probability that it is not exactly divisible by 5?

Solution $P(\text{it is divisible by 5}) = \frac{\text{number of choices that are exactly divisible by 5}}{\text{total number of possible choices}}$

$$P(\text{it is divisible by 5}) = \frac{4}{20} = \frac{1}{5}$$

$$P(\text{not divisible by 5}) = 1 - \frac{1}{5}$$

$$= \frac{4}{5}$$

$$= 0.8$$

Answer: 0.8

4. A card is drawn at random from an ordinary pack of playing cards. Find the probability that it is not a heart.

Solution $P(\text{a heart}) = \frac{\text{number of choices that are hearts}}{\text{total number of possible choices}}$

$$P(\text{a heart}) = \frac{13}{52} = \frac{1}{4}$$

$$P(\text{not a heart}) = 1 - \frac{1}{4}$$

$$= \frac{4}{4} - \frac{1}{4}$$

$$= \frac{3}{4}$$

Answer: $\frac{3}{4}$