

# COMPLEMENTARY EVENTS

## SKILLS QUESTIONS

Q1. At a school assembly, 62% of the students said they were in favour of a new design for the school badge. If the principal asked a student at random about proposed design, find the probability that this student is:

- (a) in favour of the design
- (b) not in favour of the new design.

Q2. A container holds 3 red, 1 blue and 4 yellow balls. Find the theoretical probability that when one ball is removed, it is:

- (a) red
- (b) not red.

Q3. Write the following complementary probabilities (as decimals).

(a) 17% of students admit to frequent cyber-bullying. What is the chance that a student is not a cyber-bully?

(b) The chance of dying from cancer in USA is 178 per 100000 per year. What is the probability that a US citizen will not die from cancer this year?

(c) The murder rate in New York is 386 murders per year. The population of New York is 8 million. Calculate the probability that a New York citizen will not be murdered.

(d) 6000 US people are killed in car accidents each year while texting. The US population is 300 million. Find the complementary probability that you will not be killed while texting in a car accident.

(e) 19% of the world's population were born in China. 17% of the world's population were born in India. What is the chance that a person was not born in these countries?

(f) The chance of being struck by lightning sometime in a lifetime is 1 in 1 million. What is the chance of not being struck by lightning?

(g) In Bali in Indonesia, 60% of tourists were bitten by monkeys in one year. What is the chance that a tourist will not be bitten by a Balinese monkey?



# ANSWERS

Q1. (a) 62%  
(b) 38%

Q2. (a)  $\frac{3}{8}$   
(b)  $\frac{5}{8}$

Q3. (a) 0.83  
(b) 0.99822  
(c) 0.99995175  
(d) 0.99998  
(e) 0.64  
(f) 0.999999  
(g) 0.4