Unit 14 · Probability

HARDER WORKSHEET

Full marks 23

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 23

1 At least one [3]

Solve. Show your working.

A die is thrown three times. Find the probability of getting at least one six.

Answer: _____

2 Find the bag [3]

Solve. Show your working.

A bag has n red balls and 3 blue balls. Two balls are drawn one after the other without replacement. The probability that both are blue is 1/7. Find n.

Answer: _____

3 Is it possible? [2]

Answer the following questions. Give reasons.

i. "$P(A) = 0.6$, $P(B) = 0.5$, and A and B are mutually exclusive." Can this be true?

ii. "$P(A) = 0.6$, $P(B) = 0.5$, A and B are independent and $P(A \cap B) = 0.4$." Can this be true?

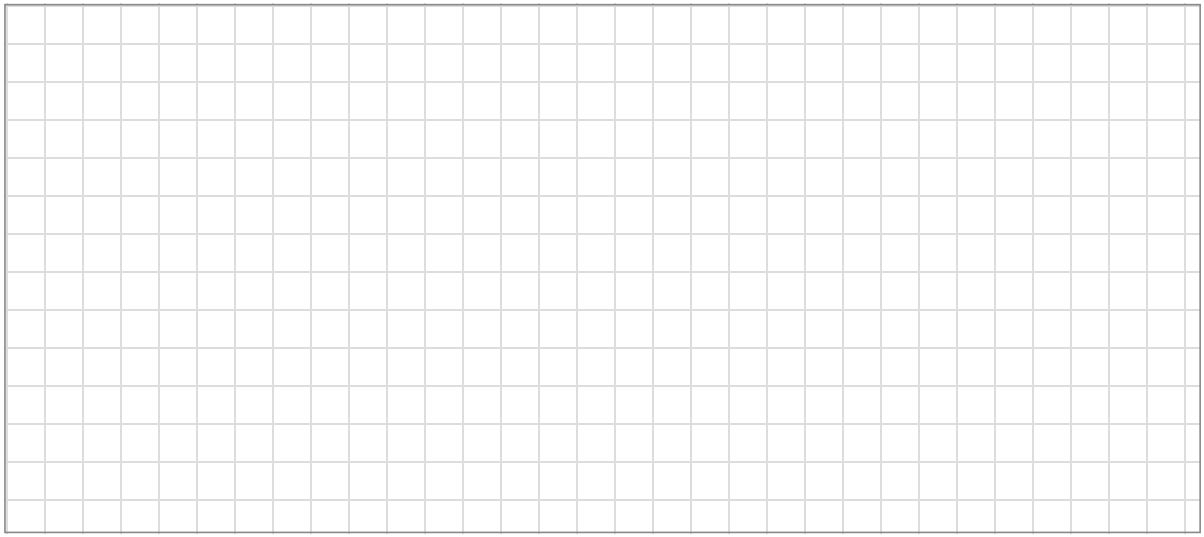
4 Three draws [4]

Solve. Show your working.

Of 10 bulbs in a box, 3 are faulty. Three bulbs are taken one after the other without replacement. Find the probability that

i. none is faulty,

ii. exactly one is faulty.

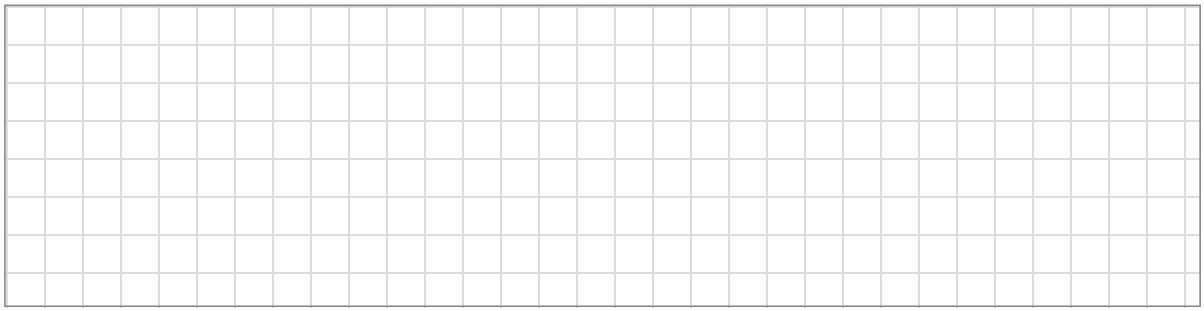


Answer: _____

5 How many times more? [2]

Solve. Show your working.

Two cards are drawn from a pack of 52. Is getting two aces more likely with replacement or without? How many times as likely?



Answer: _____

6 Two traffic lights [3]

Solve. Show your working.

On her way to school Anju's bus passes two traffic lights. The probability that the first is green is 0.4 and that the second is green is 0.5, independently. Find the probability that the bus

i. is stopped at exactly one light,

ii. is not stopped at all.

Answer: _____

7 Spot the error [2]

Answer the following question.

Hari says: "Two coins can show two heads, two tails, or one of each. That's three outcomes, so the probability of one of each is 1/3." What is wrong? Find the right probability.

8 Either or both [2]

Solve. Show your working.

A card is drawn from cards numbered 1 to 30. Find the probability that its number is a multiple of 2 or of 5.

Answer: _____

9 Make your own [2]

Answer the following question.

Make a bag of red and blue balls, 10 balls or fewer, so that when two balls are drawn **with** replacement, the probability that both are red is 4/9. Say why your bag works.