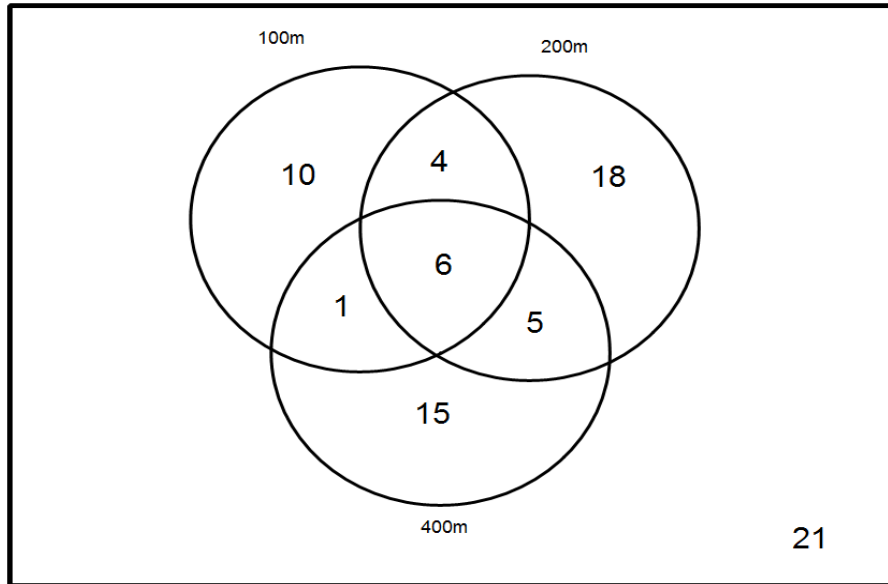


Question 1

1.1 (8)



1.2 33 (3)

1.3 $P(X \geq 3) = \frac{4 + 6 + 5 + 1}{80} = \frac{16}{80} = 0,2$ (5)

Question 2

2.1 $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ (4)

$$0,7 = 0,4 + x - 0,4x$$

$$0,6x = 0,3$$

$$x = 0,5$$

2.2 $P(E|F) = \frac{P(E \cap F)}{P(F)}$ (4)

$$0,2 = \frac{P(E \cap F)}{0,6}$$

$$P(E \cap F) = 0,12$$

$$P(E) = 0,8 - 0,6 + 0,12 = 0,32$$

Question 3

$$3.1 \quad n(S) = 8! = 40320 \quad (4)$$

$$3.2 \quad P(X) = \frac{4! \times (2!)^4}{8!} = \frac{1}{105} = 0,0095 \quad (4)$$

$$3.3 \quad P(X) = \frac{4! \times 4!}{8!} = \frac{1}{70} = 0,0143 \quad (4)$$

Question 4

$$4.1 \quad P(X) = \frac{\binom{5}{3} \binom{7}{2}}{12} = 0,2652 \quad (6)$$

$$4.2 \quad P(X = 7) = \binom{10}{7} (0,7)^7 (0,3)^3 = 0,2668 \quad (5)$$

$$4.3 \text{ (a)} \quad n(X) = \frac{5!}{2! \times 2!} + \frac{2 \times 5!}{2! \times 3!} = 50 \quad (6)$$

$$4.3 \text{ (b)} \quad n(s) = 5 \times 2 + 2 = 12 \quad (6)$$

Question 5

$$5.1 \quad r = -0,9179 \quad \text{Strong negative} \quad (3)$$

$$5.2 \quad a = 15,39 \quad (3)$$

$$b = 0,00002789$$

$$y = 15,39 - 0,000028$$

$$5.3 \quad 15 = 15.39 - 0,000028x \quad (3)$$

$$x = 13983 = 14000$$

Question 6

$$6.1 \quad \frac{13}{80} = \frac{20}{x} \quad (3)$$

$$x = 123$$

$$6.2 \quad P(X = 0) = \frac{\binom{20}{0} \binom{100}{10}}{\binom{120}{10}} \quad (5)$$
$$= 0,1491$$

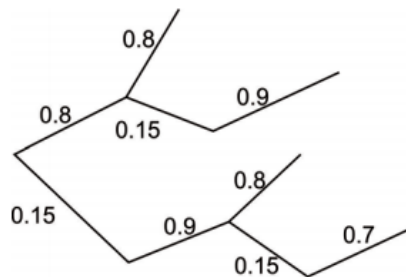
$$6.3 \quad P(X \geq 2) = 1 - \binom{15}{0} (20\%)^0 (80\%)^{15} - \binom{15}{1} (20\%)^1 (80\%)^{14} \quad (6)$$
$$= 0,8329$$

Question 7

$$7.1 \quad P(x) = \frac{1}{6} \quad (4)$$

$$7.2 \quad P(x) = 0 \quad (2)$$

Question 8



$$8.1 \quad P(x) = 0,8 + (0,15)(0,9) = 0,9350 \quad (4)$$

$$8.2 \quad P(x) = (0,8)(0,8) + (0,8)(0,15)(0,9) + (0,15)(0,9)(0,8) + (0,15)(0,9)(0,15)(0,7) \quad (8)$$
$$= 0,8702$$