

Question 1

(a) Animal	Angle
Hens	45
Sheep	120
Cows	156
Pigs	30
Geese	9

(b) i) $\frac{1}{12}$

ii) 0

iii) $\frac{(80+104+20)}{240} = \frac{17}{20}$

Question 2

(a) Red

(b) i) $1 - (0.6 + 0.15 + 0.15) = 0.1$

ii) 0

Notes:

(a) B1 cao

(b) i) M1 for $1 - (0.6 + 0.15 + 0.15)$

ii) A1 for 0.1

B1 cao

Question 3

(a) i) blue

ii) less of them

(b) mark at 7 cm

(c) $\frac{1}{12}$

Notes:

(a) i) B1 cao

ii) B1 cao

(b) B1 cao tolerance 0.5 cm

(c) B1 cao accept 0.8 or better

Question 4

(a) 0.7 (F)

(b) $1 - 0.6 = 0.4$ (E)

(c) $P(\text{pass}) + P(\text{fail}) = 1$
since $P(\text{pass}) > 0.5$ then $P(\text{pass}) > P(\text{fail})$ (E)

Question 5

$1 - \frac{1}{12} =$

accept $\frac{4}{12} + \frac{2}{12} + \frac{3}{12} + \frac{2}{12} = \frac{11}{12}$

Question 6

$$1 - (0.31 + 0.28 + 0.24) = 0.17$$

Question 7

(a) i) $\frac{8}{13}$ or 0.62...

ii) $1 - \frac{8}{13} = \frac{5}{13}$ (or 0.38..)

(b) (y, y) (y, g) (g, y) (g, g)

Question 8

$\frac{46}{200}$ or $\frac{23}{100}$ or 0.23 or 23%

Question 9

(a) $1 - 0.995 = 0.005$ (C)

(b) $10\,000 \times (a) - 50$ (B)

Question 10

(a) $1000 \times 0.7 = 700$ (C)

(b) $0.6 \times 0.7 = 0.42$ (B)

(c) $0.6 \times 0.3 = 0.18$ (B)

(d) $P(\text{pass}) + P(\text{fail}) \times P(\text{pass})$
 $0.7 + 0.3 \times 0.7 = 0.91$ (A*)

Question 11

(a) $\frac{10}{20}$ or $\frac{1}{2}$

(b) $\frac{7}{20}$

Notes:

(a) B1 cao oe 0.5, 50% only.

(b) B1 cao oe 0.35, 35% only.

Question 12

(a) 300

(b) {3,H}; {1,H}; {2,H}; {4,H}; {5,H}; {1,T}; {2,T}; {3,T}; {4,T}; {5,T}

(c) i) $1 - (0.36 + 0.1 + 0.25 + 0.15) = 0.14$ oe

ii) 0

iii) 1

Notes:

(a) B1

(b) B2 for all 10 [condone {3,H} absent]
 B1 if 6 correct

(c) i) M1

A1 cao

ii) B1 cao Accept 0, 0, 0.0, zero, nought. Do not accept 1 5
 "no possibility", "no chance"

iii) B1 cao

Question 13

$\frac{3}{8}$

Question 14

(a) 0.91

(b) 3

Question 15

(a) (i) White

(ii) Red

(b) (i) R marked correctly

(ii) Y marked correctly

(c) (i) $\frac{10}{20}$ or equivalent

(ii) 0

(iii) $\frac{7}{20}$ or equivalent

(d) $\frac{15}{20}$ or equivalent

Question 16

(a) Correct table

(b) $\frac{1}{6}$ or $\frac{2}{12}$

(c) $\frac{4}{12}$ or $\frac{2}{6}$ or $\frac{1}{3}$

Question 17

(i) $\frac{12}{25}$

(ii) $\frac{1}{5}$ or $\frac{5}{25}$

Question 18

$\frac{1}{350}$

Question 19

(a) (i) 0.2 oe

(ii) 2

(b) 40

Question 20

(a) 0.92 oe

(b) 4