Answers: Binomial Distribution

The answers might change in the fourth figure, depending on whether you use a calculator or tables.

1 (a) 0.0819 (b) 0.0154 (c) 0.0001

2 (a) 0.2561 (b) 0.2048 (c) 0.0005

3 (a) 0.2119 (b) 0.4728 (c) 0.0498

4 (a) 0.0017 (b) 6

5 (a) 0.2461 (b) 0.4102 (c) 0.0196
(d) 0.9102

6 (a) 0.0781 (b) 0.0176

7 (a) 0.6496
(b) The students are not chosen independently.

8 0.0545; no (the outcomes are still green and not-green)

9 0.1143; 0.2226; breakages are not independent of each other (if one egg in a box is broken, it is more likely that others will be).

10 0.0652; for example, P(hurricane) is constant for each month.

11 (a) 0.7648 (b) 0.1811 (c) 0.9947
(d) 0.2352

12 (a) 0.8338 (b) 0.1209 (c) 0.3823
(d) 0.1662

13 (a) 0.1503 (b) 0.9894 (c) 0.6172

14 (a) 7 (b) 14 (c) 14

15 0.2039. The adults must be independent of each other as to whether they are wearing jeans; the probability that each adult is wearing jeans must be the same. (Do not say there must be only two outcomes; this is automatically implied by the question.)