

- 12** It is known that, on average, 40% of the drivers who take their driving test at a local test centre pass their driving test.
- Each day 32 drivers take their driving test at this centre.
- The number of drivers who pass their test on a particular day can be modelled by the distribution  $B(32, 0.4)$
- 12 (a)** State one assumption, in context, required for this distribution to be used. **[1 mark]**
- 12 (b)** Find the probability that exactly 7 of the drivers on a particular day pass their test. **[1 mark]**
- 12 (c)** Find the probability that, at most, 16 of the drivers on a particular day pass their test. **[1 mark]**
- 12 (d)** Find the probability that more than 12 of the drivers on a particular day pass their test. **[2 marks]**
- 12 (e)** Find the mean number of drivers per day who pass their test. **[1 mark]**
- 12 (f)** Find the standard deviation of the number of drivers per day who pass their test. **[2 marks]**