

1. exponential, $P(X \leq 15) = F(15) = 0.4791$
2. binomial, $P(X \leq 1) = b(1; 3, \frac{10}{1000}) = 0.0294$
3. Poisson, $P(X = 0) = p(0; (\frac{17}{300})(10)) = 0.5674$
4. negative binomial, $P(X = 12) = b^*(12; 1, 0.08) = 0.0320$
5. normal, $P(2250 \leq X \leq 2350) = N(2350; 2304, 37) - N(2250; 2304, 37) = 0.8209$
6. normal and binomial, the probability that one screw is less than 2.35 cm long is

$$P(X \leq 2.35) = N(2.35; 2.31, 0.03) = 0.9088$$

and the probability that 8 or more out of ten randomly selected screws are less than 2.35 cm long is

$$P(X \geq 8) = 1 - B(7; 10, 0.9088) = 0.9441$$

7. negative binomial, $P(X \geq 3) = 1 - B^*(2; 2, 0.35) = 0.8775$ OR
binomial, $1 - P(X = 2) = 1 - b(2; 2, 0.35) = 0.8775$
8. Poisson, $P(X = 2) = p(2; (\frac{3}{5})(\frac{3}{2})) = 0.1647$
9. hypergeometric, $P(X \geq 5) = 1 - H(4; 13, 54, 162) = 0.4479$
10. exponential, $P(X \leq 4300) = F(4300) = 0.6321$