a) There are four Jacks in the deck (4 favorable events), there are 52 cards (all events). Total probability is 4/52.

b) There are four Kings in the deck (4 favorable events), there are 52 cards (all events). Total probability is 4/52.

c) There are four Jacks and four Kings in the deck (8 favorable events), there are 52 cards (all events). Total probability is $P(Jack) + P(King) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$

d) There are four Jacks and four Kings in the deck, there are 52 cards (all events). Total probability is $P(Jack) * P(King) = \frac{4}{52} * \frac{4}{52} = \frac{16}{2704} = \frac{1}{169}$

e) There are four 6, four Kings, four Jacks in the deck, there are 52 cards (all events). Total probability is $P(Jack) + P(King) + P(6) = \frac{4}{52} + \frac{4}{52} + \frac{4}{52} = \frac{12}{52} = \frac{3}{13}$

f) There are thirteen heart cards and four Jacks, there are 52 cards (all events). Total probability is $P(Hearts) * P(Jacks) = \frac{13}{52} * \frac{4}{52} = \frac{1}{52}$

g) (I think you meant hearts and kings) There are thirteen heart cards and four Kings, there are 52 cards (all events). Total probability is $P(Hearts) * P(Kings) = \frac{13}{52} * \frac{4}{52} = \frac{1}{52}$

h) There are four Jacks and four 6 in the deck (8 favorable events), there are 52 cards (all events). Total probability is $P(Jack) + P(6) = \frac{4}{52} + \frac{4}{42} = \frac{8}{52} = \frac{2}{13}$

The probability of Hearts and (Jack or 6) is $P(Hearts) * P(Jack\ or\ 6) = \frac{13}{52} * \frac{2}{13} = \frac{1}{26}$

i) There are thirteen heart cards and four Jacks, there are 52 cards (all events). Total probability is $P(Hearts) * P(Jacks) = \frac{13}{52} * \frac{4}{52} = \frac{1}{52}$

The probability of Hearts and Jacks and $6 = P(Hearts) * P(Jacks) * P(6) = \frac{1}{52} * \frac{4}{52} = \frac{1}{676}$