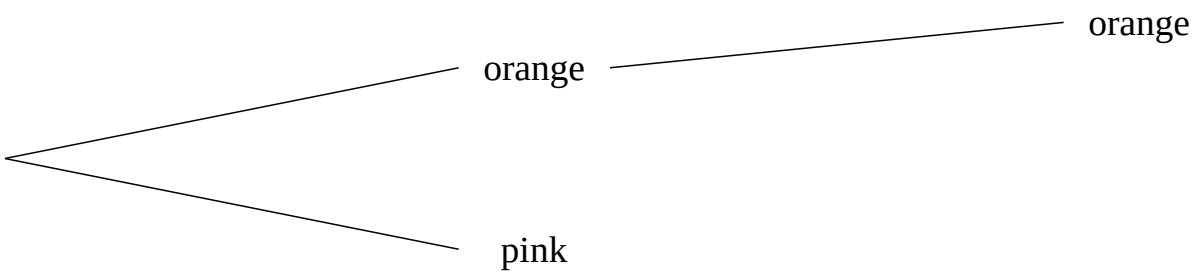
Name: **Class/Set:**

Tree Diagrams (Independent)

1: A spinner has 1 orange section and 4 pink sections (all equal).
It is spun twice.
Complete this tree diagram and hence answer the following:



a) What is the probability of getting orange twice?

_____

b) What is the probability of not getting orange twice?

_____

c) What is the probability of getting the same colour twice?

_____

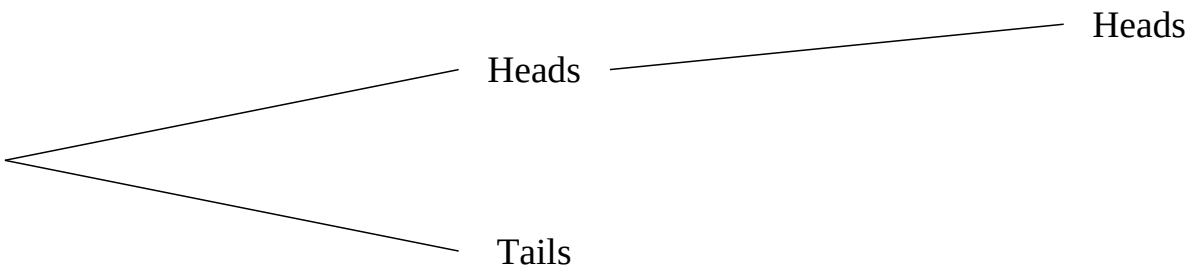
d) What is the probability of getting different colours?

_____

e) What is the probability of not getting orange twice?

_____

2: The probability of a biased coin landing Tails up is 0.71.
It is tossed twice.
Complete this tree diagram and hence answer the following:



a) What is the probability of getting Tails twice?

_____

b) What is the probability of not getting Tails twice?

_____

c) What is the probability of getting the same result twice?

_____

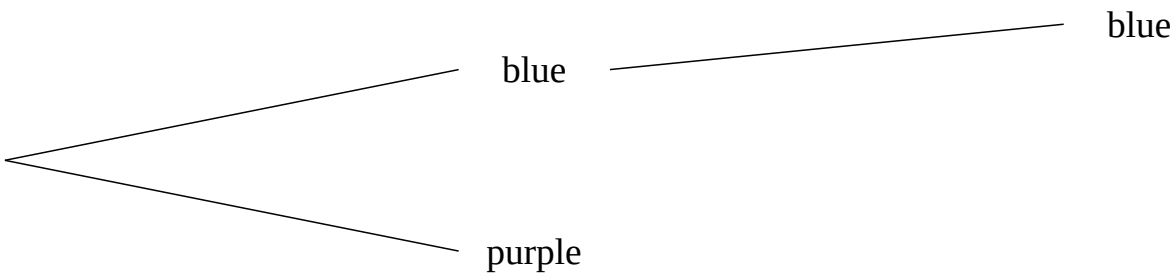
d) What is the probability of getting Heads exactly once?

_____

e) What is the probability of getting Heads twice?

_____

3: One spinner has 6 blue sections and 2 purple sections (all equal).
Another spinner has 3 blue sections and 6 purple sections (all equal).
Complete this tree diagram and hence answer the following:



a) What is the probability of getting blue twice?

_____

b) What is the probability of not getting blue twice?

_____

c) What is the probability of getting different colours?

_____

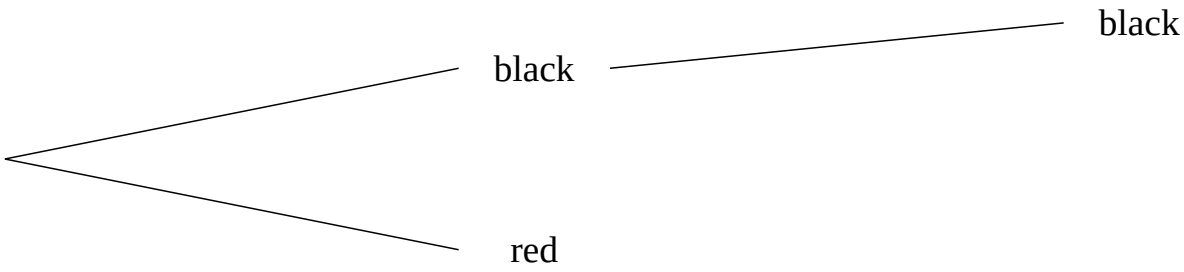
d) What is the probability of getting the same colour twice?

_____

e) What is the probability of not getting purple twice?

_____

4: One drawer contains 7 black socks and 2 red socks.
A second drawer contains 2 black socks and 6 red socks.
A sock is chosen at random from each drawer.
Complete this tree diagram and hence answer the following:



a) What is the probability of getting two black socks?

_____

b) What is the probability of getting red at least once?

_____

c) What is the probability of getting two socks of different colours?

_____

d) What is the probability of getting two socks of the same colour?

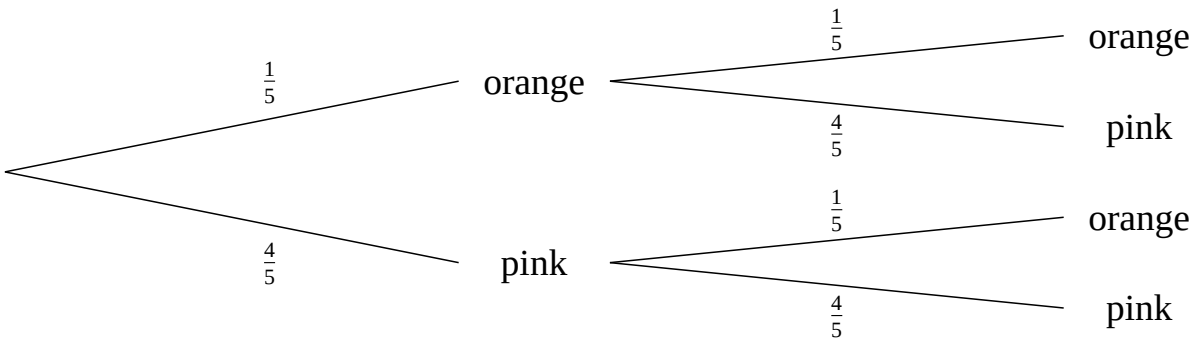
_____

e) What is the probability of getting red at least once?

_____

Answers: Tree Diagrams (Independent)

1:



a) p(getting orange twice) = $\frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$

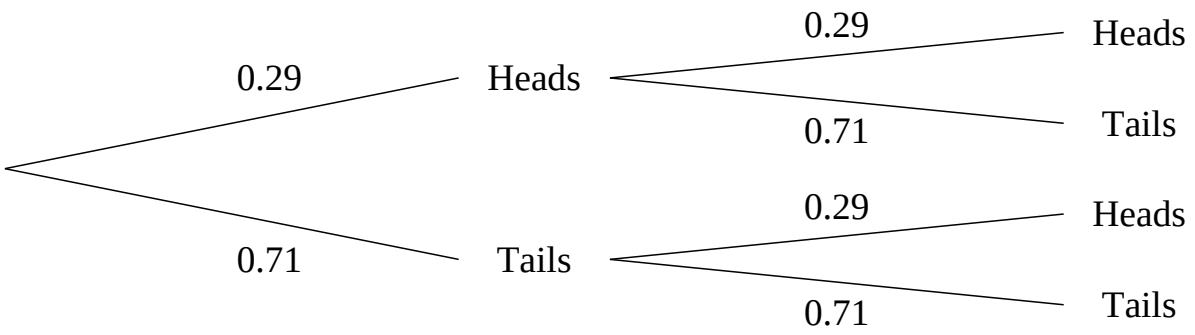
b) p(not getting orange twice) = $1 - \frac{1}{5} \times \frac{1}{5} = \frac{24}{25}$

c) p(getting the same colour twice) = $\frac{1}{5} \times \frac{1}{5} + \frac{4}{5} \times \frac{4}{5} = \frac{17}{25}$

d) p(getting different colours) = $\frac{1}{5} \times \frac{4}{5} + \frac{4}{5} \times \frac{1}{5} = \frac{8}{25}$

e) p(not getting orange twice) = $1 - \frac{1}{5} \times \frac{1}{5} = \frac{24}{25}$

2:



a) p(getting Tails twice) = $0.71 \times 0.71 = 0.5041$

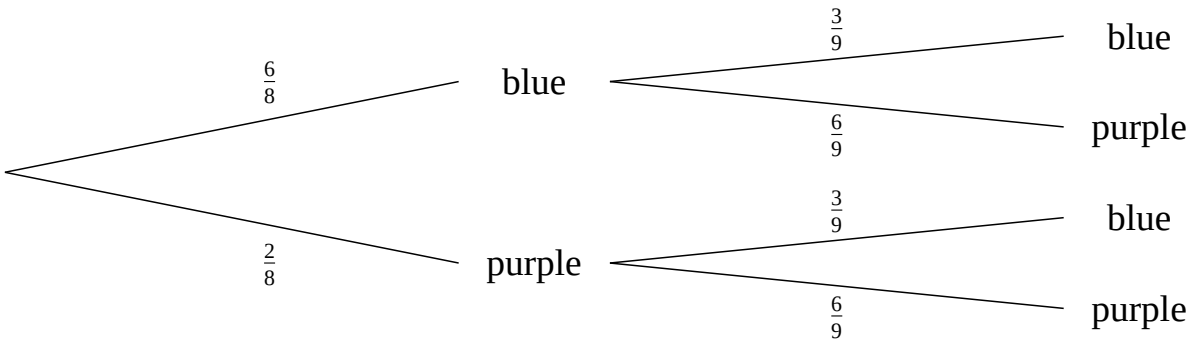
b) p(not getting Tails twice) = $1 - 0.71 \times 0.71 = 0.4959$

c) p(getting the same result twice) = $0.29 \times 0.29 + 0.71 \times 0.71 = 0.5882$

d) p(getting Heads exactly once) = $0.29 \times 0.71 + 0.71 \times 0.29 = 0.4118$

e) p(getting Heads twice) = $0.29 \times 0.29 = 0.0841$

3:



a) p(getting blue twice) = $\frac{6}{8} \times \frac{3}{9} = \frac{18}{72} = \frac{1}{4}$

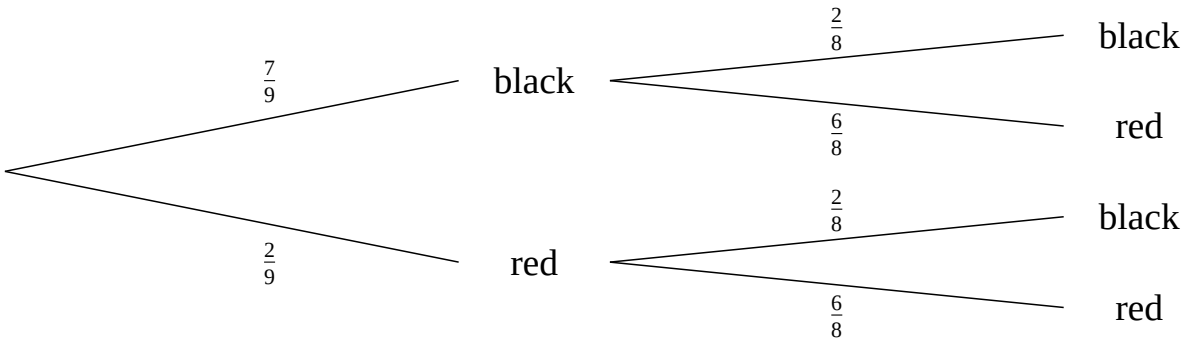
b) p(not getting blue twice) = $1 - \frac{6}{8} \times \frac{3}{9} = \frac{54}{72} = \frac{3}{4}$

c) p(getting different colours) = $\frac{6}{8} \times \frac{6}{9} + \frac{2}{8} \times \frac{3}{9} = \frac{42}{72} = \frac{7}{12}$

d) p(getting the same colour twice) = $\frac{6}{8} \times \frac{3}{9} + \frac{2}{8} \times \frac{6}{9} = \frac{30}{72} = \frac{5}{12}$

e) p(not getting purple twice) = $1 - \frac{2}{8} \times \frac{6}{9} = \frac{60}{72} = \frac{5}{6}$

4:



a) p(getting two black socks) = $\frac{7}{9} \times \frac{2}{8} = \frac{14}{72} = \frac{7}{36}$

b) p(getting red at least once) = $1 - \frac{7}{9} \times \frac{2}{8} = \frac{58}{72} = \frac{29}{36}$

c) p(getting two socks of different colours) = $\frac{7}{9} \times \frac{6}{8} + \frac{2}{9} \times \frac{2}{8} = \frac{46}{72} = \frac{23}{36}$

d) p(getting two socks of the same colour) = $\frac{7}{9} \times \frac{2}{8} + \frac{2}{9} \times \frac{6}{8} = \frac{26}{72} = \frac{13}{36}$

e) p(getting red at least once) = $1 - \frac{7}{9} \times \frac{2}{8} = \frac{58}{72} = \frac{29}{36}$