

SBHS - YEAR 10 PROBABILITY MARCH 2007

NAME _____

(1) The probability of drawing three kings in a row from a standard pack of cards is $\frac{1}{5525}$.

- (a) What is the complementary event of the above? (in words).
- (b) What is its probability?

(2) At the market t-shirt samples were on sale. They came in black, red, white and green and in sizes 6, 8, 10, 12, 14 and 16. Only one of each colour and size was available. (e.g. one red size six)

If a t-shirt is chosen at random, find the probability that it is:

- (a) black and size 12?
- (b) green or size 8?
- (c) red and larger than size 10?

(3) The four Kings from a pack of cards are face down on a table. Two cards are picked at random without replacement.

Draw a tree diagram to represent this information.

Use the tree to find the probability that:

- (a) the king of hearts is chosen.
- (b) the king of hearts is not chosen.

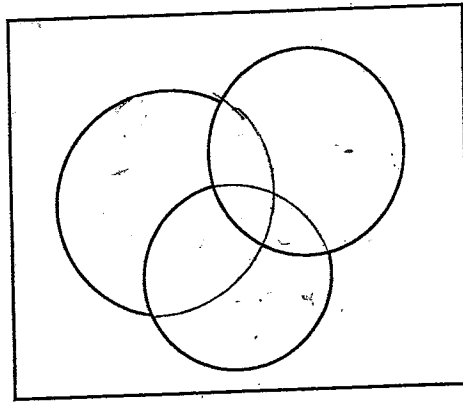
(4) Describe the likelihood of an event with a probability of:

(a) 3%

(b) 0

(c) $\frac{17}{20}$

(5)



60 students helped out during the school concert. Five acted, sang and danced. Ten acted and sang but did not dance. Five danced and sang but did not act. Eight acted and danced. Twenty five sang. Twenty acted and ten did not perform.

(a) Put this information on the Venn diagram above.

What is the probability that a student:

(b) didn't act or sing?

(c) acted and danced but didn't sing?

(d) danced?

NAME SOLUTIONS:

(1) The probability of drawing three kings in a row from a standard pack of cards is $\frac{1}{5525}$.

(a) What is the complementary event of the above? (in words).
The probability of NOT drawing 3 kings in a row.

(b) What is its probability?
 $1 - \frac{1}{5525}$
 $= \frac{5524}{5525}$

(2) At the market t-shirt samples were on sale. They came in black, red, white and green and in sizes 6, 8, 10, 12, 14 and 16. Only one of each colour and size was available. (e.g. one red size six

If a t-shirt is chosen at random, find the probability that it is:

(a) black and size 12? $\frac{1}{4} \times \frac{1}{6} = \frac{1}{24}$

(b) green or size 8? $\frac{1}{4} \times \frac{1}{6} = \frac{1}{24}$

(c) red and larger than size 10?
 $\frac{1}{4} \times \frac{3}{6} = \frac{1}{8}$

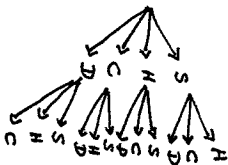
(3) The four Kings from a pack of cards are face down on a table. Two cards are picked at random without replacement.

Draw a tree diagram to represent this information.

Use the tree to find the probability that:

(a) the king of hearts is chosen. $\frac{6}{12} = \frac{1}{2}$

(b) the king of hearts is not chosen. $1 - \frac{1}{2} = \frac{1}{2}$.



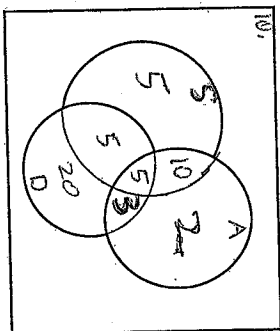
(4) Describe the likelihood of an event with a probability of:

(a) 3% *extremely unlikely*

(b) 0 *impossible*

(c) $\frac{17}{20}$ *likely*

(5)



Acting
Sung
Dance

60 students helped out during the school concert. Five acted, sang and danced. Ten acted and sang but did not dance. Five danced and sang but did not act. Eight acted and danced. Twenty five sang. Twenty acted and ten did not perform.

(a) Put this information on the Venn diagram above.

What is the probability that a student:

(b) didn't act or sing? $\frac{1}{2}$

(c) acted and danced but didn't sing? $\frac{3}{60} = \frac{1}{20}$

(d) danced? $\frac{27}{60} = \frac{9}{20}$