

FOR ERICA
MATH 105

1. Ways = $11!$
 $= 39,916,800$ ways

2. Possible outcomes = $10P_4$
 $= 5040$ outcomes

3. Possible outcomes = $13C_{10}$
 $= 286$ outcomes

4. Sample space

	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	3	4	5	6	7
3	3	4	5	6	7	8
4	4	5	6	7	8	9
5	5	6	7	8	9	10
6	6	7	8	9	10	11
7	7	8	9	10	11	12

$P(2) = \frac{1}{36}$

$P(12) = \frac{1}{36}$

$P(2) \text{ or } P(12) = \frac{1}{36} + \frac{1}{36} = \frac{2}{36} = \frac{1}{18}$

$= \frac{1}{18}$

$$5. P(\text{Red Jack})$$

$$P(\text{Jack}) = \frac{1}{13}$$

$$P(\text{at least 1 Jack red}) = \frac{4}{52} + \left(1 - \frac{4}{52}\right) \cdot \frac{4}{52}$$

$$= \frac{1}{13}$$

$$= \frac{4}{52}$$

$$6. \text{Remaining cards} = 52 - 8$$

$$= 44$$

In 52 card there are 4 kings

Remaining $4 - 3 = 1$ king

$$P(\text{king}) = \frac{1}{44}$$

$$7. P(6) \text{ or } P(\text{heart}) = P(6) + P(\text{heart})$$

$$= \frac{4}{52} + \frac{13}{52}$$

$$= \frac{17}{52}$$

$$= \frac{17}{52}$$

$$8. \text{Clothing Ways} = 15 \times 3 = 45 \text{ different Ways.}$$

$$9. P(MI) / P(P)$$

$$\frac{P(MI) \times P(P)}{P(MIP)} = \frac{40 \times 160}{360}$$

$$= \frac{6400}{360}$$

$$= \frac{160}{9}$$

$$8. \text{ Ways} = 15 \times 3 \\ = 45 \text{ different ways}$$

$$9. a) P(\text{Middle Income} | \text{public school}) = \frac{110}{252}$$

$$= \frac{55}{126}$$

$$b) P(\text{Public school} | \text{Middle \& Low}) = \frac{126}{(110 + 22)} = \frac{126}{252}$$

$$= \frac{132}{252}$$

$$= \frac{11}{21}$$

$$10) P(\text{Private school}) = \frac{98}{350}$$

$$= \frac{7}{25}$$

$$10. A \cup (B \cap C)$$

$$B \cap C = \{w, x, y\}$$

~~A~~ (not)

$$\{w, x, y, z\} \cup \{w, x, y\}$$

$$\{w, x, y, z\}$$

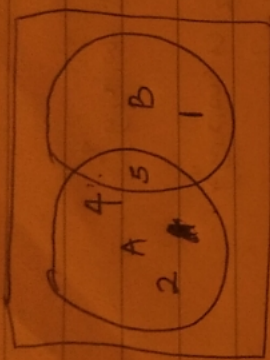
$$A \cup (B \cap C) = \{w, x, y, z\}$$

$$11. (B \cap C)' = \{7, 2\}$$

$$12. \text{Subsets of } A = 2^4 = 16$$

A has 16 subsets.

$$13. \text{Proper subsets of } C = 2^4 - 1 = 16 - 1 = 15$$



15.

P	q	$\neg p$	$p \vee q$	$q \wedge \neg p$
T	T	F	T	T
T	F	F	T	F
F	T	T	T	F
F	F	T	F	T

The argument is invalid.