

Name: _____ Demetrius Johnson _____

No calculators are allowed. Show your work. The points for each problem are indicated. Problems with incomplete work may receive partial, or no credit.

COs: [No direct COs]

Points: _____ / 20

1. [15 pts] Given the following sets, compute the requested set operations

$$A = \{1, 2, 4, 6\}$$

$$B = \{2, 3, 4, 5, 6\}$$

$$C = \{1, 6\}$$

$$D = \{7, 9, 12\}$$

- a. Find $A \cap B$

$$A \{1, 2, 4, 6\} \cap B \{2, 3, 4, 5, 6\} = \boxed{\{2, 4, 6\}}$$

- b. Find $A \cap C$

$$A \{1, 2, 4, 6\} \cap C \{1, 6\} = \boxed{\{1, 6\}}$$

- c. Find $A \cup B$

$$A \{1, 2, 4, 6\} \cup B \{2, 3, 4, 5, 6\} = \boxed{\{1, 2, 3, 4, 5, 6\}}$$

- d. Find $A \cap D$

$$A \{1, 2, 4, 6\} \cap D \{7, 9, 12\} = \emptyset$$

\downarrow
 Empty set $\{\}$

2. [5 pts] Find the truth value of the following compound proposition, given the following simple propositions:

A = The Sun is hot

B = $4 > 9$

C = Water is wet

= T

= F

= T

Compound proposition: $(A \vee B) \wedge C$

\vee = or

\wedge = and

$(T \vee F) \wedge T$

$\downarrow \quad \downarrow$
 $T \wedge T =$

\boxed{T}

↑
Solution