

Module 6 Assessment

8, 20, 22 (D), 28 - part 1 14, 20(c), 32(a), 56(a), 58(B)

#8 Let  $A = \text{set}(2, 4, 6)$ ,  $B = \text{set}(2, 6)$ ,  $C = \text{set}(4, 6)$ ,  
 $D = \text{set}(4, 6, 8)$

A subset is defined as a set of which all elements are contained in another set.

B is a subset of A, C, is a subset of both A & D

20  $A = \emptyset$  or  $\{3\}$ , and  $B = \{\emptyset, \{13\}\}$

$A \in B$  since  $\emptyset$  is an element of B

$A = \emptyset$  or  $\{3\}$ , and  $B = \{\emptyset, \{13\}\}$

Let  $A = \emptyset$  or  $\{3\}$ , and  $B = \{\emptyset, \{13\}\}$  and we see  $A \in B$  and  $A \subset B$

22 D)  $\{\emptyset, \{\emptyset\}, \{\emptyset, \{\emptyset\}\}\}$   
 = 3

28  $A \subset C$ ,  $B \subset D$

$(a, b) \in A \times B$

$a \in A$

$a \in C$

$b \in B$

$b \in D$

$(a, b) \in C \times D \implies A \times B \subseteq C \times D$

part 2

20 C)  $(A-B) - C \subset A-C$

$x \in (A-B) - C$

$x \in (A-B) \wedge \neg(x \in C)$

$x \in A \wedge \neg(x \in B) \wedge \neg(x \in C)$

$x \in A \wedge \neg(x \in C) \implies x \in A-C$

$(A-B) - C \subset A-C$