

Workshop Lab 3: Sets

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$S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$

$A = \{4, 8, 12, 16, 20\}$

$B = \{1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20\}$

$C = \{9, 13, 17\}$

$D = \{1, 3, 5, 7, 9, 11, 13, 15, 17, 19\}$

$E = \{2, 3, 5, 7\}$

$F = \{1, 5, 7\}$

$G = \{1, 3, 7, 9, 11, 13, 17, 19\}$

1. A'

$= \{1, 2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19\}$

2. $B \cap C$

$= \{9, 13, 17\}$

3. $(C \cup G) \cap (D \setminus A)$

$= \{1, 3, 5, 7, 9, 11, 13, 15, 17, 19\}$

4. $F \times D$

$= \{(1,1) (1,3) (1,7) (1,9) (1,11) (1,13) (1,17) (1,19) (5,1) (5,3) (5,7) (5,9) (5,11) (5,13) (5,17) (5,19) (7,1) (7,3) (7,7) (7,9) (7,11) (7,13) (7,19)\}$

5. $\mathcal{P}(E)$

$= \{\emptyset \{2\} \{3\} \{5\} \{7\} \{2,3\} \{2,5\} \{2,7\} \{3,5\} \{3,7\} \{5,7\} \{2,3,5\} \{2,3,7\} \{2,5,7\} \{3,5,7\} \{2,3,5,7\}\}$