

SETS

Use the following sets to answer the true/false questions. When finding complements of sets, assume sets A, B, C, D, and E are subsets of the universal set U1 and sets F, G, and H are subsets of the universal set U2 . Otherwise, just view sets A-H as a group of sets in one big universal set.

$$U1 = \{x|x \text{ is a letter in the alphabet}\}$$

$$U2 = \{0, 1, 2, \dots, 10\}$$

$$A = \{a, b, c\}$$

$$B = \{a, e, i, o, u\}$$

$$C = \{d, e, g, h, z\}$$

$$D = \{b, c, a\}$$

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

$$F = \{0, 2, 4, 6, 8\}$$

$$G = \{1, 2, 3, 4, 5\}$$

$$H = \{1, 2, 7, 8\}$$

True or False?

(a) $A = D$ is _____

(n) D has 8 subsets is _____

(b) $\emptyset \in F$ is _____

(o) $A \subseteq D$ is _____

(c) $B \subset U1$ is _____

(p) $\{w, x\} \subseteq E$ is _____

(d) $F^c = \{x|x \text{ is an odd integer between 0 and 10}\}$ is _____

(q) C^c has 2,097,152 subsets is _____

(e) $B^c \cap C = \{d, g, h, z\}$ is _____

(r) $A \cup B = \{a\}$ is _____

(f) $G^c \cup F = \{0, 2, 4, 6, 7, 8, 9, 10\}$ is _____

(s) $H \subset G$ is _____

(g) $G \subseteq U2$ is _____

(t) $n(B \cup F) = 10$ is _____

(h) $\emptyset \subset E$ is _____

(u) $\{a, b\} \notin A$ is _____

(i) E has 16 proper subsets is _____

(v) $(H \cap F) \subseteq G^c$ is _____

(j) $A \cup (B \cap E)^c = U1$ is _____

(w) $\{h, o, w, d, y\} \subset U1$ is _____

(k) $\{3\} \in G$ is _____

(x) $\emptyset = \{\}$ is _____

(l) $2 \in F$ is _____

(y) $n(C \cup H) = 0$ is _____

(m) $\emptyset = \{\emptyset\}$ is _____

(z) $U1 + U2 = 37$ is _____