

A.A.30: Set Theory: Find the complement of a subset of a given set, within a given universe

- 1 If the universal set is {pennies, nickels, dimes, quarters}, what is the complement of the set {nickels}?
 - 1) { }
 - 2) {pennies, quarters}
 - 3) {pennies, dimes, quarters}
 - 4) {pennies, nickels, dimes, quarters}
- 2 Given: Set $U = \{S, O, P, H, I, A\}$
Set $B = \{A, I, O\}$
If set B is a subset of set U , what is the complement of set B ?
 - 1) $\{O, P, S\}$
 - 2) $\{I, P, S\}$
 - 3) $\{A, H, P\}$
 - 4) $\{H, P, S\}$
- 3 Given: $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$
 $B = \{2, 3, 5, 6\}$
Set B is a subset of set U . What is the complement of set B ?
 - 1) { }
 - 2) $\{2, 3, 5, 6\}$
 - 3) $\{1, 4, 7, 8\}$
 - 4) $\{1, 2, 3, 4, 5, 6, 7, 8\}$
- 4 Given:
 $A = \{\text{All even integers from 2 to 20, inclusive}\}$
 $B = \{10, 12, 14, 16, 18\}$
What is the complement of set B within the universe of set A ?
 - 1) $\{4, 6, 8\}$
 - 2) $\{2, 4, 6, 8\}$
 - 3) $\{4, 6, 8, 20\}$
 - 4) $\{2, 4, 6, 8, 20\}$
- 5 Given:
 $A = \{\text{all odd integers from 1 through 19, inclusive}\}$
 $B = \{9, 11, 13, 15, 17\}$
What is the complement of set B within set A ?
 - 1) $\{3, 5, 7\}$
 - 2) $\{3, 5, 7, 19\}$
 - 3) $\{1, 3, 5, 7\}$
 - 4) $\{1, 3, 5, 7, 19\}$
- 6 Given:
 $A = \{\text{perfect square integers from 4-100, inclusive}\}$
 $B = \{16, 36, 49, 64\}$
The complement of set B in the universal set A is
 - 1) $\{9, 25, 81\}$
 - 2) $\{4, 9, 25, 81, 100\}$
 - 3) $\{1, 4, 9, 25, 81, 100\}$
 - 4) $\{4, 16, 36, 49, 64, 100\}$
- 7 Given: $U = \{x | 0 < x < 10 \text{ and } x \text{ is an integer}\}$
 $S = \{x | 0 < x < 10 \text{ and } x \text{ is an odd integer}\}$
The complement of set S within the universal set U is
 - 1) $\{0, 2, 4, 6, 8, 10\}$
 - 2) $\{2, 4, 6, 8, 10\}$
 - 3) $\{0, 2, 4, 6, 8\}$
 - 4) $\{2, 4, 6, 8\}$
- 8 Consider the set of integers greater than -2 and less than 6 . A subset of this set is the positive factors of 5 . What is the complement of this subset?
 - 1) $\{0, 2, 3, 4\}$
 - 2) $\{-1, 0, 2, 3, 4\}$
 - 3) $\{-2, -1, 0, 2, 3, 4, 6\}$
 - 4) $\{-2, -1, 0, 1, 2, 3, 4, 5, 6\}$
- 9 Twelve players make up a high school basketball team. The team jerseys are numbered 1 through 12. The players wearing the jerseys numbered 3, 6, 7, 8, and 11 are the only players who start a game. Using set notation, list the complement of this subset.

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1 ANS: 3 REF: 081103ia

2 ANS: 4 REF: 061001ia

3 ANS: 3 REF: 081009ia

4 ANS: 4

$A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$

REF: 080912ia

5 ANS: 4

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

REF: 081306ia

6 ANS: 2

$A = \{4, 9, 16, 25, 36, 49, 64, 81, 100\}$

REF: 011326ia

7 ANS: 4 REF: 011426ia

8 ANS: 2

The set of integers greater than -2 and less than 6 is $\{-1, 0, 1, 2, 3, 4, 5\}$. The subset of this set that is the positive factors of 5 is $\{1, 5\}$. The complement of this subset is $\{-1, 0, 2, 3, 4\}$.

REF: 060818ia

9 ANS:

$\{1, 2, 4, 5, 9, 10, 12\}$

REF: 080833ia