② COACHED EXAMPLE

Error Analysis Answer Key

EXPLAIN

Sample answer: The elements in $(A \cap B)'$ should be the elements that are in the universal set but are not in $A \cap B$. Tamara included only elements that are in A or B but are not in the intersection.

SOLVE CORRECTLY

$A \cap B = \{3, 4\}$

$(A \cap B)' = \{1, 2, 5, 6, 7, 8, 9, 10\}$

$C = \{3, 9\}$

$(A \cap B)' \cap C = \{9\}$

③ LESSON PRACTICE ⟨30⟩

Answer Key

1. C
2. A
3. D
4. D
5. A
6. C
7. A
8. In $(A \cup B) \cap C$: 1, 3, 4
   In $((A \cup B) \cap C)'$: 2, 5, 6, 7, 8

9. $\frac{3}{4}$; Sample answer: If the events are independent, then $P(F) \cdot P(G) = P(F \text{ and } G)$. $\frac{1}{6} \cdot P(G) = \frac{1}{8}$. So, $P(G) = \frac{1}{8} \div \frac{1}{6} = \frac{3}{4}$.

10. A, C, D

11. yes; Sample answer: $A \cap B$ is the set of elements that are in both A and B. $A \cup B$ are the set of elements that are in both A and B and are in either A or B. So, all elements in the intersection are also in the union. Since the empty set is a subset of all sets, this holds even if the intersection is the empty set.

12. **Part A** Sample answer: You could draw one name, give the first prize to that person, then draw a second name, and give the second prize to that person.

    Part B Sample answer: You could draw one name, give the first prize to that person, put that person's name back with the others, draw a second name, and give the second prize to that person.

13. Sample answer: $M \cup P$, $(N \cap P)'$

14. **Part A**
    Sample answer:
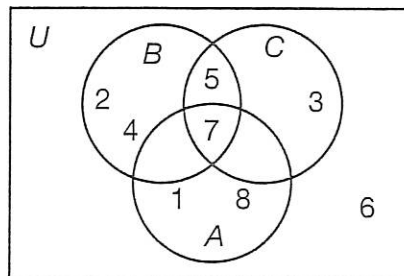
    Part B
    Sample answer: The elements 1 and 8 could be in the portion of the intersection of A and C that is not in B. The elements 3 and 6 could be in the portion of U not in $A \cup B \cup C$, or they could be in the portion of C that is not in A or B.