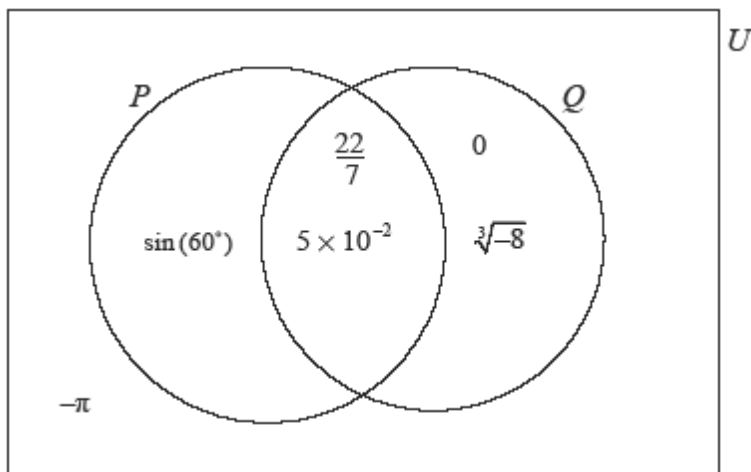


Notation / Venn dia 2 sets ANS

0 min
0 marks

1.

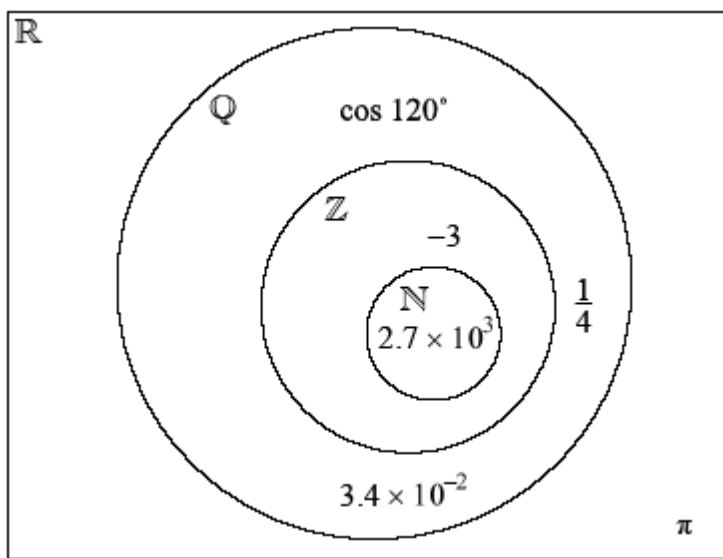


(A1)(A1)(A1)
(A1)(A1)(A1) (C6)

Note: Award (A1) for each number placed once in the correct region. Accept equivalent forms for numbers.

[6]

2.



(A1)(A1)(A1)

(A1)(A1)(A1) (C6)

Note: Award (A1) for each number placed once in the correct section. Accept equivalent forms for numbers.

[6]

3. (a) The only prime number in U is 13. (A2) (C2)

Note: Award (A1) for $\{1, 13\}$ and (A0) for any other answer.

- (b) $A = \{-4, 1, 13, 69, 10^{33}\}$ (A2) (C2)

- (c) $B = \{-4, -\frac{2}{3}, 1, 13, 26.7, 69, 10^{33}\}$ (A2) (C2)

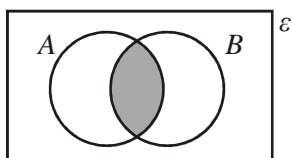
- (d) $A \cap B = \{-4, 1, 13, 69, 10^{33}\} (= A)$ (A2) (C2)

Note: In (b) and (d) allow (A1) for correct membership with **at most** one missing or one incorrect entry. A list with no set brackets is acceptable.

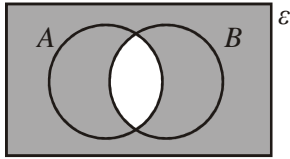
In (c) allow at most one missing entry for (A1) but if π is present award (A0).

[8]

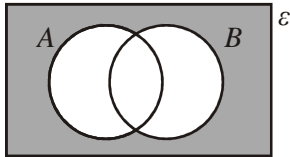
4. (a) $A \cap B$ (A1)



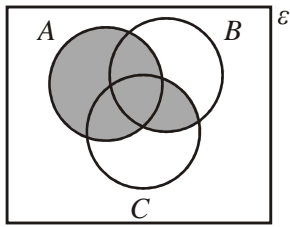
- (b) The complement of $(A \cap B)$ (A1)



- (c) The complement of $(A \cup B)$ (A1)



- (d) $A \cup (B \cap C)$ (A1)



[4]

5. (a) $A \cap B$ (A2)

- (b) $(A \cup B)'$ or $A' \cap B'$ (A2)

- (c) $A' \cap B$ (A2)

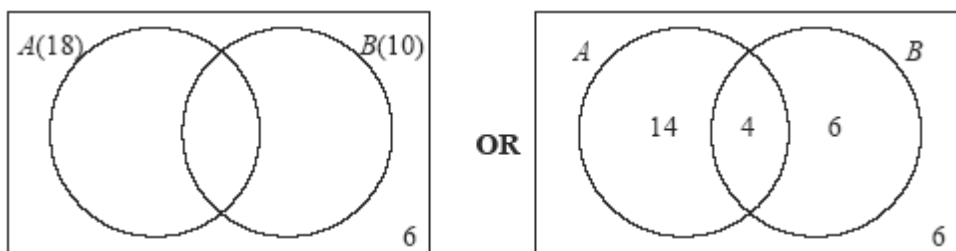
Note: Award (A1) for A' , (A1) for $\cap B$.

- (d) $(A \cup B) \cap C$ or $(A \cap C) \cup (B \cap C)$ (A2)

Note: Award (A1) for both $(A \cap C)$ and $(B \cap C)$ and (A1) for \cup . (A1) for $(A \cup B)$ and (A1) for $\cap C$.

[8]

6. (a)



(A2) (C2)

Note: Award (A2) for 3 correctly placed values, and no extras (4 need not be seen), (A1) for 2 correctly placed values, (A0) for 1 or no correctly placed values.

(b) $18 + 10 + 6 - 30$
 $= 4$

(M1)

(A1) (C2)

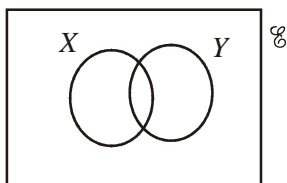
(c) $P(A | B) = \frac{4}{10} \left(\frac{2}{5}, 0.4, 40\% \right)$

(A1)(ft)(A1) (C2)

Note: Award (A1)(ft) for their numerator from part (b), (A1) for denominator.

[6]

7. (a)



(A1) 1

Note: Award (A1) for a diagram correctly labelled with X, Y and U.

(b) (i) $(X \cap Y) = \{6, 12\}$

(A1)

(ii) $X \cap \complement Y = \{2, 4, 8, 10, 14\}$

(A2) 3

(c) $(X \cup Y)' = \complement(X \cup Y) = \{1, 5, 7, 11, 13\}$
 $n(X \cup Y)' = 5$

(A1)

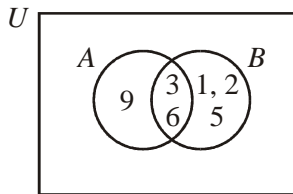
(A1) 2

[6]

8. (a) (i) $A = \{3, 6, 9\}$ (A1) (C1)
(ii) $B = \{1, 2, 3, 5, 6\}$ (A1) (C1)

Note: Candidates must list all the elements and no extra elements for each (A1)

(b)



(A2) (C2)

Notes: Follow through from (a).

Award (A1) for 3 and 6 in the intersection.

Award (A1) for other values correctly positioned

[4]

9. (a) $A = 8, 10, 12, 14, 16$ (A1) (C1)

- (b) $B = 3, 6, 9, 12, 15, 18$ (A1) (C1)

- (c) $A \cup B = 3, 6, 8, 9, 10, 12, 14, 15, 16, 18$ (A2)(ft) (C2)

Note: Award (A1) only if a single element is missing or a single extra element is present, (A0) otherwise.

- (d) $B' = 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20$ (A1)(ft)

- $A \cap B' = 8, 10, 14, 16$ (A1)(ft) (C2)

[6]