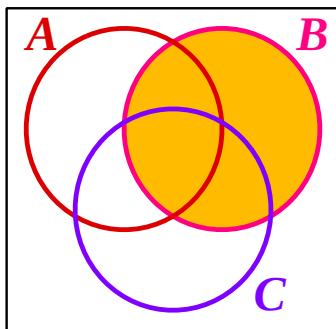
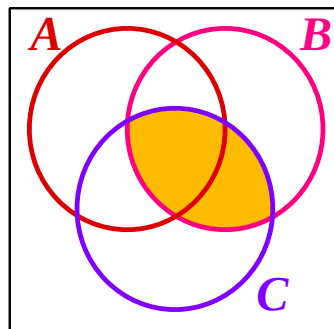


## 4.4 Answers

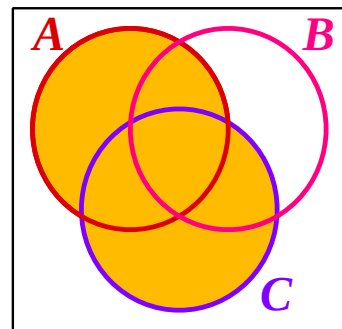
### 4.4.1 Solutions to 4.2 Example



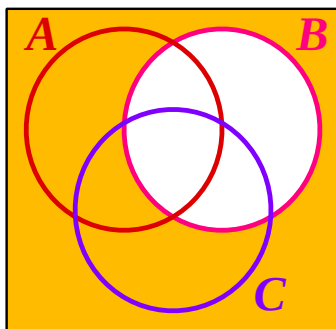
Shade :  $B$



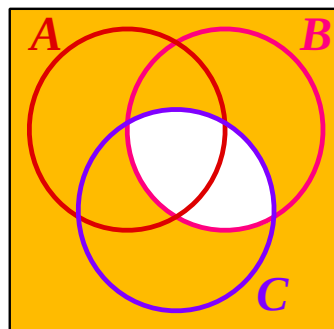
Shade :  $B \cap C$



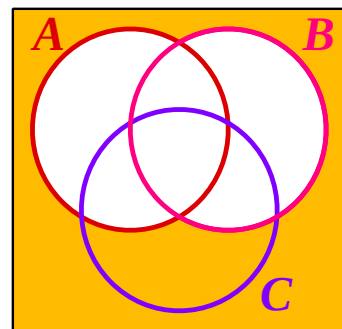
Shade :  $A \cup C$



Shade :  $B'$



Shade :  $(B \cap C)'$

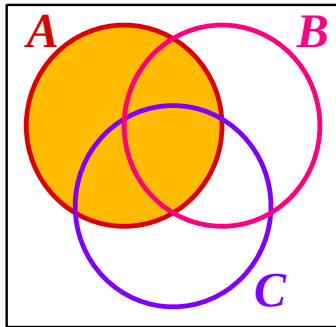


Shade :  $(A \cup B)'$

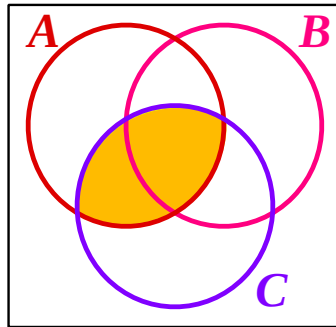
[ 6 marks ]

#### 4.4.2 Solutions to 4.3 Exercise

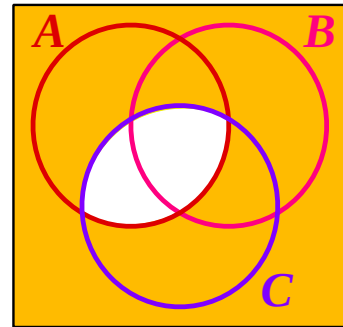
##### Answer 1



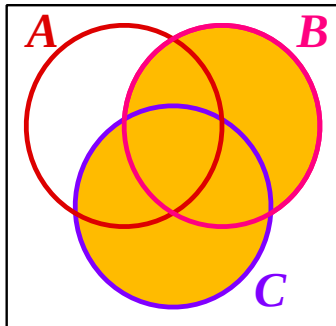
Shade :  $A$



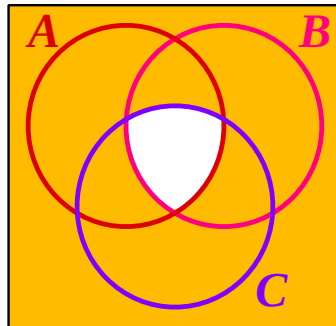
Shade :  $A \cap C$



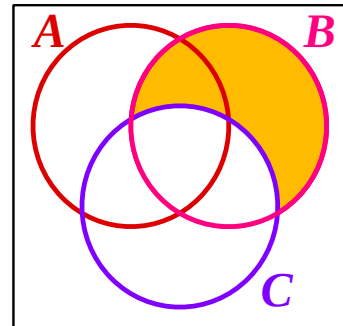
Shade :  $(A \cap C)'$



Shade :  $B \cup C$



Shade :  $(A \cap B \cap C)'$



Shade :  $B \cap C'$

[ 6 marks ]

##### Answer 2

$n\{\text{Names of days in a week}\} = 7$

[ 1 mark ]

##### Answer 3

( i )  $S = \{\text{Square numbers less than 40}\}$   
 $= \{1, 4, 9, 16, 25, 36\}$

[ 1 mark ]

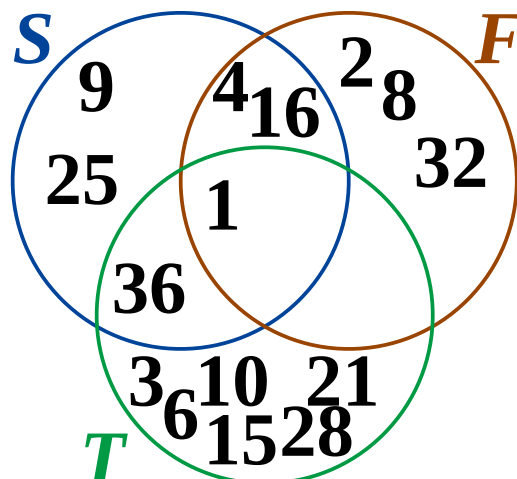
( ii )  $F = \{\text{Factors of 32}\}$   
 $= \{1, 2, 4, 8, 16, 32\}$

[ 1 mark ]

( iii )  $T = \{\text{Triangular numbers less than 40}\}$   
 $= \{1, 3, 6, 10, 15, 21, 28, 36\}$

[ 1 mark ]

(iv)



[ 3 marks ]

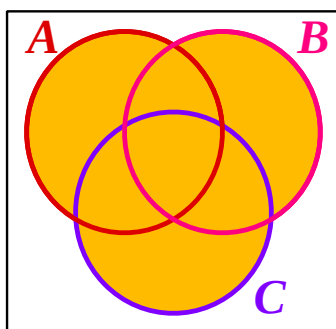
(v) (a)  $n(F) = 6$  (d)  $n(S \cup F \cup T) = 15$

(b)  $n(S \cup F) = 9$  (e)  $n(S \cap F \cap T') = 2$

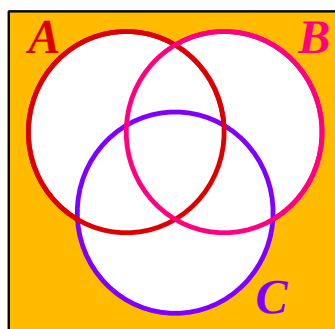
(c)  $n(S \cap F) = 3$  (f)  $n((S \cap F) \cup T) = 10$

[ 6 marks ]

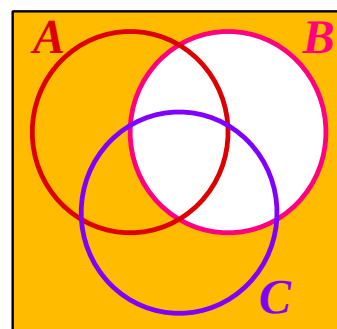
Answer 4



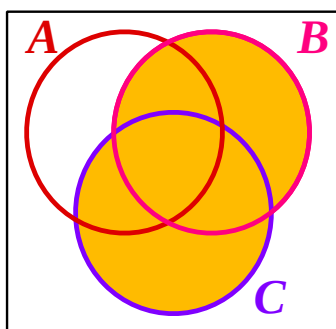
Shade :  $A \cup B \cup C$



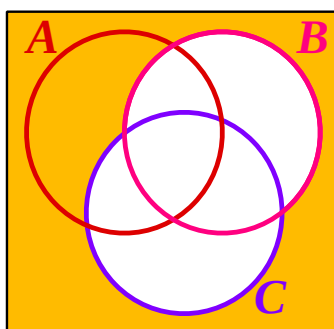
Shade :  $(A \cup B \cup C)'$



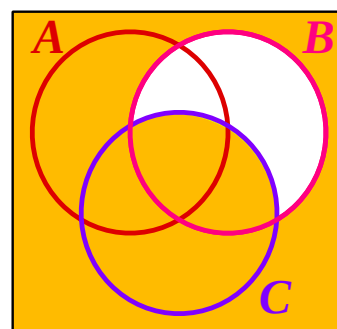
Shade :  $B'$



Shade :  $B \cup C$



Shade :  $(B \cup C)'$



Shade :  $(B \cap C')'$

[ 6 marks ]

**Answer 5**

$$V \cup C = \{\text{The Alphabet}\}$$

**[ 1 mark ]****Answer 6**

( i )      $A = \{\text{The factors of } 100\}$   
             $= \{ 1, 2, 4, 5, 10, 20, 25, 50, 100 \}$

**[ 2 marks ]**

( ii )      $B = \{\text{The factors of } 60\}$   
             $= \{1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60\}$

**[ 2 marks ]****( iii )**

|                          |   |                              |   |
|--------------------------|---|------------------------------|---|
| ( a ) $n(A) = 9$         | T | ( f ) $n(A \cap B) > 5$      | T |
| ( b ) $n(B) \neq 9$      | T | ( g ) $7 \notin (A \cup B)$  | T |
| ( c ) $3 \in (A \cup B)$ | T | ( h ) $101 \in A'$           | T |
| ( d ) $3 \in (A \cap B)$ | F | ( i ) $101 \in (A' \cup B')$ | T |
| ( e ) $50 \notin B'$     | F | ( j ) $12 \in (A \cup B)'$   | F |

**[ 10 marks ]**