1. Which of the following are true?

   a) $8 \times 14 = 14 \times 8$
   b) $11 \div 8 = 8 \div 11$
   c) $19 - 11 = 11 - 19$
   d) $14 + 19 = 19 + 14$

   (i) {b,d,a} (ii) {b,c,a} (iii) {c,d} (iv) {a,d} (v) {b,a}

2. Which of the following are true?

   a) $3 + (17 + 7) = (3 + 17) + 7$
   b) $17 - (7 - 5) = (17 - 7) - 5$
   c) $5 \times (3 \times 17) = (5 \times 3) \times 17$
   d) $7 \div (5 \div 3) = (7 \div 5) \div 3$

   (i) {b,d,a} (ii) {a,c} (iii) {b,a} (iv) {b,c,a} (v) {d,c}

3. Which of the following are true?

   a) $8 \times (7 - 17) = (8 \times 7) - (8 \times 17)$
   b) $14 \times (8 + 7) = (14 \times 8) + (14 \times 7)$
   c) $17 \div (14 + 8) = (17 \div 14) + (17 \div 8)$
   d) $7 - (17 \times 14) = (7 - 17) \times (7 - 14)$

   (i) {d,b} (ii) {c,d,a} (iii) {c,a} (iv) {c,b,a} (v) {a,b}

4. Which of the following are true?

   a) $16 + 4 = 4 + 16$
   b) $12 \div 11 = 11 \div 12$
   c) $11 \times 16 = 16 \times 11$
   d) $4 - 12 = 12 - 4$

   (i) {a,c} (ii) {b,c,a} (iii) {b,a} (iv) {b,d,a} (v) {d,c}

5. Which of the following are true?

   a) $12 + (3 + 16) = (12 + 3) + 16$
   b) $16 \div (9 \div 12) = (16 \div 9) \div 12$
   c) $3 - (16 - 9) = (3 - 16) - 9$
   d) $9 \times (12 \times 3) = (9 \times 12) \times 3$

   (i) {b,d,a} (ii) {c,d} (iii) {b,a} (iv) {a,d} (v) {b,c,a}

6. Which of the following are true?

   a) $6-(10\times11)=(6-10)\times(6-11)$
   b) $11\times(13+6)=(11\times13)+(11\times6)$
   c) $13\times(6-10)=(13\times6)-(13\times10)$
   d) $10\div(11+13)=(10\div11)+(10\div13)$

   (i) {b,c} (ii) {a,c,b} (iii) {d,c} (iv) {a,b} (v) {a,d,b}

7. Which of the following are true?

   a) whole numbers are closed under addition
   b) whole numbers are closed under division
   c) whole numbers are closed under multiplication
   d) whole numbers are closed under subtraction

   (i) {b,c,a} (ii) {d,c} (iii) {b,d,a} (iv) {a,c} (v) {b,a}

8. Which of the following are true?

   a) integers are closed under addition
   b) integers are closed under multiplication
   c) integers are closed under subtraction
   d) integers are closed under division

   (i) {d,b} (ii) {a,b,c} (iii) {d,a} (iv) {d,c} (v) {d,a,b}

Assignment Key

1) (iv)	2) (ii)	3) (v)	4) (i)	5) (iv)	6) (i)
7) (iv)	8) (ii)				