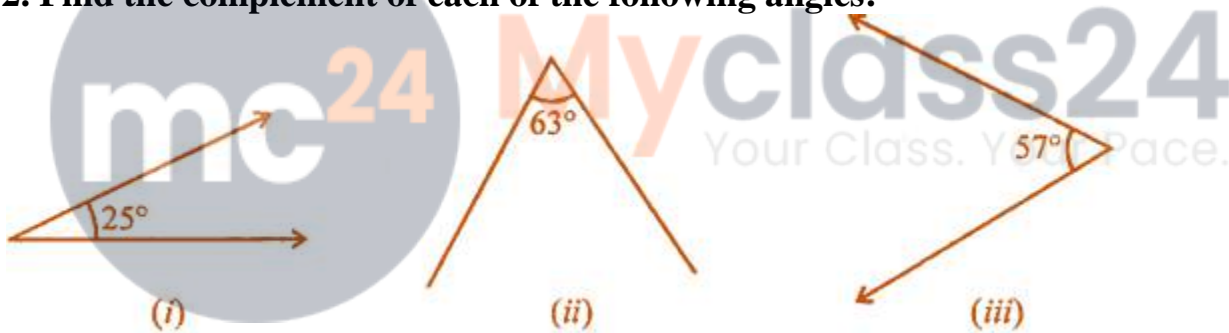


1. (i) Can two right angles be complementary?
- (ii) Can two right angles be supplementary?
- (iii) Can two adjacent angles be complementary?
- (iv) Can two adjacent angles be supplementary?
- (v) Can two obtuse angles be adjacent?
- (vi) Can an acute angle be adjacent to an obtuse angle?
- (vii) Can two right angles form a linear pair?

Solution:

- (i) No, as the sum of two complementary angles is 90° .
- (ii) Yes
- (iii) Yes
- (iv) Yes
- (v) Yes
- (vi) Yes
- (vii) Yes

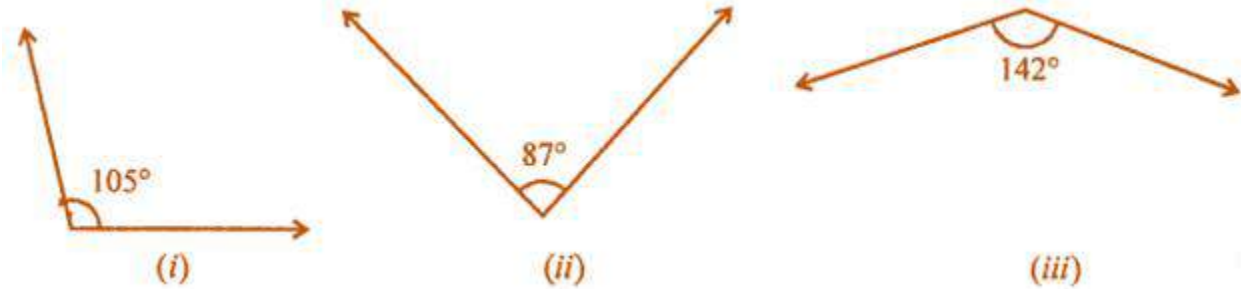
2. Find the complement of each of the following angles:



Solution:

- (i) Complement of 25° is $90^\circ - 25^\circ = 65^\circ$.
- (ii) Complement of 63° is $90^\circ - 63^\circ = 27^\circ$.
- (iii) Complement of 57° is $90^\circ - 57^\circ = 33^\circ$.

3. Find the supplement of each of the following angles:



Solution:

(i) Supplement of 105° is $180^\circ - 105^\circ = 75^\circ$.

(ii) Supplement of 87° is $180^\circ - 87^\circ = 93^\circ$.

(iii) Supplement of 142° is $180^\circ - 142^\circ = 38^\circ$.

4. Identify which of the following pairs of angles are complementary and which are supplementary:

(i) 55° , 125°

(ii) 34° , 56°

(iii) 137° , 43°

(iv) 112° , 68°

(v) 45° , 45°

(vi) 72° , 18°

Solution:

(i) 55° , 125° are supplementary angles.

(ii) 34° , 56° are complementary angles.

(iii) 137° , 43° are supplementary angles.

(iv) 112° , 68° are supplementary angles.

(v) 45° , 45° are complementary angles.

(vi) 72° , 18° are complementary angles.

5. (i) Find the angle which is equal to its complement.

(ii) Find the angle which is equal to its supplement.

Solution:

(i) The angle which is equal to its complement is

$$90/2 = 45^\circ.$$

So, 45° is complement to 45° .

(ii) The angle which is equal to its supplement is

$$180/2 = 90^\circ.$$

So, 90° is supplement to 90° .

6. Two complementary angles are $(x + 4)^\circ$ and $(2x - 7)^\circ$, find the value of x.

Solution:

Given:

Two complementary angles are $(x + 4)^\circ$ and $(2x - 7)^\circ$

$$x + 4 + 2x - 7 = 90^\circ$$

$$3x - 3 = 90^\circ$$

$$3x = 90 + 3$$

$$3x = 93$$

$$x = 93/3$$

$$x = 31^\circ$$

\therefore Value of x is 31° .

7. Two supplementary angles are in the ratio of 2: 7, find the angles.

Solution:

Given:

Two supplementary angles are in the ratio of 2: 7

We know the sum of the angles is 180° .

So, first angle = $[180^\circ/(2+7)] \times 2$

$$= (180/9) \times 2$$

$$= 40^\circ$$

Second angle = $[180^\circ/(2+7)] \times 7$

$$= (180/9) \times 7$$

$$= 140^\circ$$

\therefore The angles are 40° and 140° .