

Lines and Angles Ex 8.1 Q1

Answer:

(i) Let the complement of 20° angle measures x°

Since the angles are complementary, therefore their sum must be equal to $90^{\rm o}$ Or we can say that

$$x + 20 = 90$$

$$x = 90 - 20$$

$$x = 70$$

Hence, the complement of 20° angle measures 70°

(ii) Let the complement of 35° angle measures x°

Since the angles are complementary, therefore their sum must be equal to $90^{\rm o}$ Or we can say that

$$x + 35 = 90$$

$$x = 90 - 35$$

$$x = 55$$

Hence, the complement of 35° angle measures 55°

(iii) Let the complement of 90° angle measures x°

Since the angles are complementary, therefore their sum must be equal to $90^{\rm o}$ Or we can say that

$$x + 90 = 90$$

$$x = 90 - 90$$

$$x = \boxed{0}$$

Hence, the complement of 90° angle measures 0°

(iv) Let the complement of 77° angle measures x°

Since the angles are complementary, therefore their sum must be equal to $90^{\rm o}$ Or we can say that

$$x + 77 = 90$$

$$x = 90 - 77$$

$$x = [13]$$

Hence, the complement of 77° angle measures 13°

(v) Let the complement of 30° angle measures x°

Since the angles are complementary, therefore their sum must be equal to $90^{\rm o}$ Or we can say that

$$x + 30 = 90$$

$$x = 90 - 30$$

$$x = 60$$

Hence, the complement of 30° angle measures 60°

Lines and Angles Ex 8.1 Q2

Answer:

(i) Let the supplement of 54° angle measures x°

Since the angles are supplementary, therefore their sum must be equal to $\!180^{o}$ Or we can say that

$$x + 54 = 180$$

$$x = 180 - 54$$

$$x = 126$$

Hence, the supplement of 54° angle measures 126°

(ii) Let the supplement of 1320 angle measures xo

Since the angles are supplementary, therefore their sum must be equal to $\!180^{o}$ Or we can say that

$$x + 132 = 180$$

$$x = 180 - 132$$

$$x = 48$$

Hence, the supplement of 132° angle measures $\boxed{48^{\circ}}$

(iii) Let the supplement of 1380 angle measures xo

Since the angles are supplementary, therefore their sum must be equal to $\!180^{o}$ Or we can say that

$$x + 138 = 180$$

$$x = 180 - 138$$

$$x = 42$$

Hence, the supplement of 138° angle measures $\boxed{42^{\circ}}$

Lines and Angles Ex 8.1 Q3

Answer:

Let one angle be x° .

Then the required angle becomes $(x-28)^0$

It is given that x° and $(x-28)^{\circ}$ are complementary

Therefore their sum must be equal to 900

$$x + (x - 28) = 90$$

$$2x - 28 = 90$$

$$2x = 90 + 28$$

$$2x = 118$$

On dividing both sides of the equation by 2, we get:

$$x = 59$$

Also

$$x - 28 = 59 - 28$$

$$= 31^{\circ}$$

Hence the measure of the required angle is $\boxed{31^0}$.

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