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 90^0

Or we can say that

$$x+20=90$$
$$x=90-20$$
$$x=\boxed{70}$$

Hence, the complement of 20^0 angle measures $\boxed{70^0}$

(ii) Let the complement of 35^0 angle measures $x°$

Since the angles are complementary, therefore their sum must be equal to 90^0

Or we can say that

$$x+35=90$$
$$x=90-35$$
$$x=\boxed{55}$$

Hence, the complement of 35^0 angle measures $\boxed{55^0}$

(iii) Let the complement of 90^0 angle measures $x°$

Since the angles are complementary, therefore their sum must be equal to 90^0

Or we can say that

$$x+90=90$$
$$x=90-90$$
$$x=\boxed{0}$$

Hence, the complement of 90^0 angle measures $\boxed{0^0}$

(iv) Let the complement of 77^0 angle measures $x°$

Since the angles are complementary, therefore their sum must be equal to 90^0

Or we can say that

$$x+77=90$$
$$x=90-77$$
$$x=\boxed{13}$$

Hence, the complement of 77^0 angle measures $\boxed{13^0}$

(v) Let the complement of 30^0 angle measures $x°$

Since the angles are complementary, therefore their sum must be equal to 90^0

Or we can say that

$$x+30=90$$
$$x=90-30$$
$$x=\boxed{60}$$

Hence, the complement of 30^0 angle measures $\boxed{60^0}$.

Lines and Angles Ex 8.1 Q2

Answer :

(i) Let the supplement of 54^0 angle measures $x°$

Since the angles are supplementary, therefore their sum must be equal to 180^0

Or we can say that

$$x+54=180$$
$$x=180-54$$
$$x=\boxed{126}$$

Hence, the supplement of 54^0 angle measures $\boxed{126^0}$.

(ii) Let the supplement of 132^0 angle measures $x°$

Since the angles are supplementary, therefore their sum must be equal to 180^0

Or we can say that

$$x+132=180$$
$$x=180-132$$
$$x=\boxed{48}$$

Hence, the supplement of 132^0 angle measures $\boxed{48^0}$.

(iii) Let the supplement of 138^0 angle measures $x°$

Since the angles are supplementary, therefore their sum must be equal to 180^0

Or we can say that

$$x+138=180$$
$$x=180-138$$
$$x=\boxed{42}$$

Hence, the supplement of 138^0 angle measures $\boxed{42^0}$.

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 $(x-28)^0$ are complementary

Therefore their sum must be equal to 90^0

$$x+(x-28)=90$$
$$2x-28=90$$
$$2x=90+28$$
$$2x=118$$

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

$$x=59$$

Also

$$x-28=59-28$$
$$=\boxed{31^0}$$

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

********** END **********