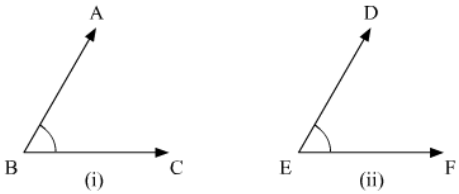
Lines and Angles Ex 8.4 Q24

Answer :

The figure is given as follows:



It is given that, arms *BA* and *BC* of $\angle ABC$ are respectively parallel to arms *ED* and *EF* of $\angle DEF$.

We need to show that $\angle ABC = \angle DEF$

Let us extend *BC* to meet *EF*.

We have $AB \| DE$. $\angle ABC$ and $\angle DEF$ are corresponding angles, these two should be equal.

Therefore,

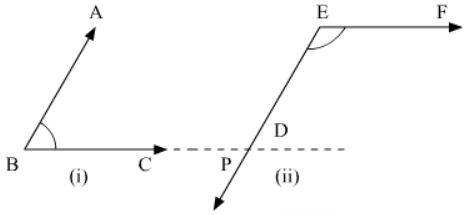
$\boxed{\angle ABC = \angle DEF}$

Hence proved.

Lines and Angles Ex 8.4 Q25

Answer :

The figure is given as follows:



It is given that, arms *BA* and *BC* of $\angle ABC$ are respectively parallel to arms *ED* and *EF* of $\angle DEF$.

We need to show that $\angle ABC + \angle DEF = 180^0$

Let us extend *BC* to meet *ED* at point *P*.

We have $AB \| DE$ and $BP \| EF$. So, $\angle BPE$ and $\angle PEF$ are corresponding angles, these two should be equal.

Therefore,

$\boxed{\angle BPE = \angle PEF}$

Also, we have $AB \| PE$. So, $\angle ABP$ and $\angle BPE$ are consecutive interior angles, these two must be supplementary.

Therefore,

$$\angle ABP + \angle BPE = 180^0$$

$$\Rightarrow \angle ABC + \angle PEF = 180^0$$

$$\Rightarrow \angle ABC + \angle DEF = 180^0$$

Hence proved.

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