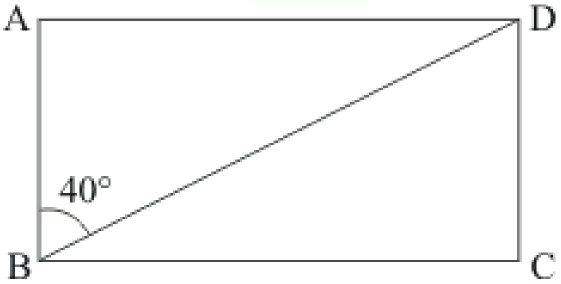
Quadrilaterals Ex 14.3 Q4

Answer :

The rectangle is given as follows with $\angle ABD = 40^0$

We have to find $\angle DBC$.



An angle of a rectangle is equal to 90^0.

Therefore,

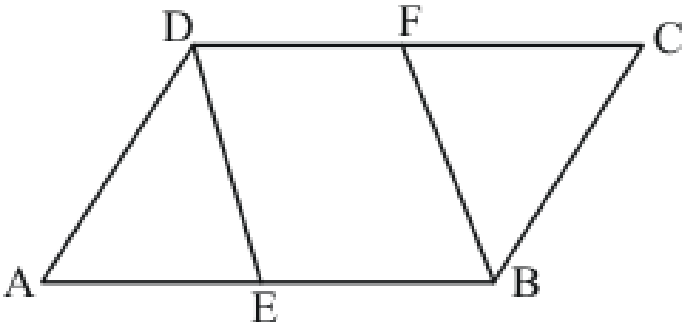
$$\angle ABC = 90^0$$
$$\angle ABD + \angle DBC = 90^0$$
$$40^0 + \angle DBC = 90^0$$
$$\angle DBC = \boxed{50^0}$$

Hence, the measure for $\angle DBC$ is $\boxed{50^0}$.

Quadrilaterals Ex 14.3 Q5

Answer :

Figure is given as follows:



It is given that *ABCD* is a parallelogram.

E is the mid point of *AB*

Thus,

$AE = BE$,

$BE = \frac{1}{2}AB$ ...... (i)

Similarly,

$DF = FC$

$DF = \frac{1}{2}CD$ ......(ii)

From (i) and (ii)

$DF = BE$

Also, $DC \parallel AB$

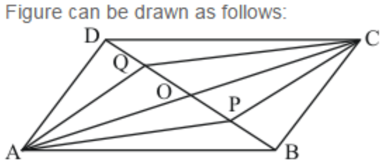
Thus, $DF \parallel BE$

Therefore, *EBFD* is a parallelogram.

Quadrilaterals Ex 14.3 Q6

Answer :

Figure can be drawn as follows:



We have *P* and *Q* as the points of trisection of the diagonal *BD* of parallelogram ABCD.

We need to prove that *AC* bisects *PQ*. That is, $OP = OQ$.

Since diagonals of a parallelogram bisect each other.

Therefore, we get:

$OA = OC$ and $OB = OD$

P and *Q* as the points of trisection of the diagonal *BD*.

Therefore,

$BP = PQ$ and $PQ = QD$

Now, $OB = OD$ and $BP = QD$

Thus,

$OB - BP = OD - OQ$

$\boxed{OP = OQ}$

AC bisects PQ.

Hence proved.

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