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| **Vectors and Ratio** |
| **(a)** | **(b)** |
| In the triangle $OAB$, $\vec{OA}=3a$ and $\vec{AB}=6b$. The point $C$ divides the line $OB$ in the ratio $2 : 1$.Express the following in terms of $a $and $b$: | $OABC$ is a trapezium, where $\vec{OA}=2a$ and $\vec{AB}=2b$. $\vec{OC}=2\vec{AB}$ and $D$ splits the line $BC$ in the ratio $1 : 3$.Express the following in terms of $a $and $b$:  |
| (a) $\vec{OB}$ | (b) $\vec{OC}$ | (a) $\vec{BO}$ | (b) $\vec{BC}$ |
| (c) $\vec{BC}$ | (d) $\vec{AC}$ | (c) $\vec{BD}$ | (d) $\vec{DO}$ |
|  **(c)** | **(d)** |
| In the parallelogram $OABC$, $\vec{OA}=a$ and $\vec{OC}=b$. The point $X$ divides the line $OB$ in the ratio $3 : 2$.Express the following in terms of $a $and $b$: | $OABC$ is a quadrilateral. $\vec{OA}=a,$ $\vec{OC}=b$and $\vec{CB}=c$.The point $X$ divides the line $OC$ in the ratio $2 : 1$. The point $Y$ divides the line $AB$ in the ratio$3 : 1$.Express the following in terms of $a, b $and $c$:  |
| (a) $\vec{AB}$ | (b) $\vec{OB}$ | (a) $\vec{OX}$ | (b) $\vec{XC}$ |
| (c) $\vec{OX}$ | (d) $\vec{BX}$ | (c) $\vec{AB}$ | (d) $\vec{AY}$ |
| (e) $\vec{AX}$ | (f) $\vec{XC}$ | (e) $\vec{AX}$ | (f) $\vec{XY}$ |