15.98


$$
\vec{\alpha}_{O B}=\alpha_{\partial B} \mathrm{rad} / \mathrm{R}^{2} 2
$$



$$
\vec{a}_{D}=? \quad \vec{a}_{E}=?
$$

$$
\vec{\omega}_{G B}=\overrightarrow{0}, \quad \overrightarrow{\omega_{A B}}=\overrightarrow{0}
$$

$$
\text { The ac. of } O B \text { is at } O \text {. }
$$

$$
\because \because A B \cdots-Z
$$

$$
\psi=90^{\circ} \quad \frac{360}{3}=120
$$

$$
\overline{O B}=600 \mathrm{kng}
$$

$$
5(100)=600
$$

$$
\begin{aligned}
& \overline{A Z} \cos \beta=\overline{A B}, \quad \overline{A Z}\left(\frac{4}{5}\right)=200 \\
& \overline{A Z}=\frac{5}{4}(2500)=250 \quad \overline{A Z}=2504 \mathrm{~mm}
\end{aligned}
$$

$$
\frac{160}{4}=40 \quad \overline{A B}=200 \mathrm{~mm}
$$

$$
\overline{B Z}=\overline{A B} \tan \beta=250\left(\frac{3}{4}\right)=150
$$

$$
\overline{B Z}=150 \mathrm{~mm}
$$

$$
a_{B}=\overline{O B} \alpha_{O D}=600 \alpha_{O B}=\overline{B Z} \alpha_{A B}=150 \alpha_{A B}, \alpha_{A B}=\frac{600 \alpha_{O B}}{150}
$$

$$
\alpha_{A B}=4 \alpha_{O B} \quad \vec{\alpha}_{A B}=4 \alpha_{O B} 2
$$

$$
a_{E}=\overline{O E} \alpha_{O B}=300 \alpha_{O B} \rightarrow \vec{a}_{E}=\square \mathrm{mm} / \mathrm{h}^{2}
$$

$$
\vec{a}_{D}=\vec{\alpha}_{A B} \times \overrightarrow{Z D}=\square \quad a_{E}=\vec{\alpha}_{O B} \times \overrightarrow{O E}=\square
$$

Reminder: study Example 15.18 very carefully.

$$
\vec{a}_{A / 0}+\vec{a}_{0}=\vec{a}_{A \mid B}+\vec{a}_{B / C}+\vec{a}_{c}
$$

$$
\begin{aligned}
& \vec{v}_{0}=19.2 \mathrm{im} / \mathrm{R} \leftarrow \\
& \vec{a}_{0}=24 \mathrm{in} / \mathrm{R}^{2} \rightarrow \\
& \vec{\alpha}_{A B}=? \quad \vec{\alpha}_{B C}=?
\end{aligned}
$$

$$
\vec{a}_{A}=\vec{a}_{A / 0}+\vec{a}_{0}=\vec{a}_{A / B}+\vec{a}_{B}
$$

The wee. of gear $O$ is at $D$.

$$
\vec{a}_{A / C}+\vec{a}_{0}=\vec{a}_{A / B}+\vec{a}_{B / C}
$$

$$
" \because " B C ": C B=E
$$

$$
\overline{A E}=4(5)=20 \quad \overline{A E}=20 \mathrm{~m} .
$$

$$
v_{A}=\overline{D A} \omega_{0}=10(2.4)=\overline{A E} \omega_{A B}=20 \omega_{A B} \quad \omega_{A B}=\frac{24}{20}=1.2
$$

$$
\vec{\omega}_{A B}=1.2 \mathrm{rad} / \mathrm{c} 2 \quad v_{B}=\overline{B E} \omega_{A B}=24(1.2)=\overline{B C} \omega_{B C}=18 \omega_{B C}
$$

$$
\omega_{B C}=\frac{2+(0 .)^{2}}{12 g}=1.6 \quad \vec{\omega}_{A B}=1.6 \mathrm{a} \mathrm{ad} / \mathrm{hI}
$$

$$
\vec{\alpha}_{A B}=2.46 \mathrm{rad} / \mathrm{R}^{2} 2 \quad \vec{\alpha}_{B C}=1
$$

