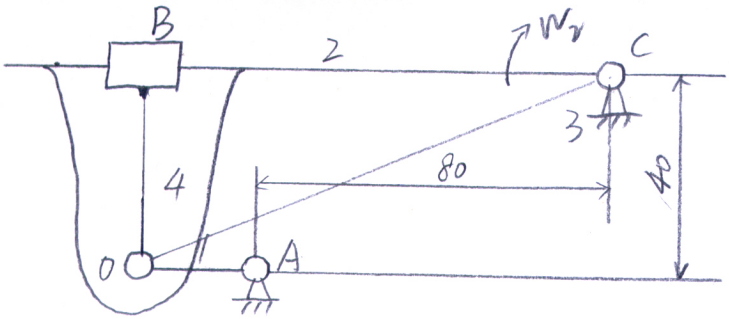
十：



解：扩大构件2，使 B_2, B_4, B_1 在同一点上

$$\vec{V}_{B1} = \vec{V}_{B4} = \vec{V}_{B2} + \vec{V}_{B4B2}$$

方向：$\perp OA$　$\perp OC$　$/\!/ BC$

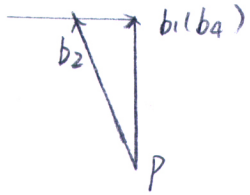
大小：$\omega_1 l_{OA}$　？　？

$V_{B1} = \omega_1 l_{OA} = 50 \times 0.02 = 1\ m/s$

∴ 以 P 为极点，$\overline{pb_1} = 20mm$ 代表 V_{b1}

∴ $\mu_v = \frac{V_{b1}}{\overline{pb_1}} = \frac{1}{20} = 0.05\ m/s \cdot mm$

画速度影像图



有 $\overline{pb_2} = 22mm$，$\overline{b_2b_4} = 9mm$

∴ $V_{B2} = \mu_v \cdot \overline{pb_2} = 0.05 \times 22 = 1.1 m/s$

$V_{B4B2} = \mu_v \overline{b_2b_4} = 0.05 \times 9 = 0.45\ m/s$

$l_{OC} = \sqrt{(0.04)^2 + (0.1)^2} = 0.108$

∴ $\omega_2 = \frac{V_{B2}}{l_{OC}} = \frac{1.1}{0.108} = 10.2\ rad/s$

$$\vec{a}_{B1} = \vec{a}_{B4} = \vec{a}^{n}_{B2} + \vec{a}^{t}_{B2} + \vec{a}^{k}_{B4B2} + \vec{a}^{r}_{B4B2}$$

方向：$O \to A$　$O \to C$　$\perp OC$　V_{B4B2} 沿 ω_2 转 $90°$　$/\!/ BC$

大小：$\omega_1^2 l_{OA}$　$\omega^2 l_{OC}$　？　$2\omega_2 V_{B4B2}$　？

$a_{B4} = \omega_1^2 l_{OA} = 50\ m/s^2$,

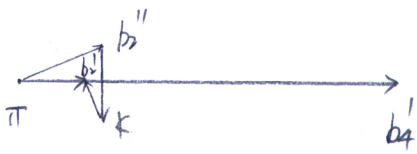
$a^{n}_{B2} = \omega_2^2 l_{OC} = 11.2\ m/s^2$

$a^{k}_{B4B2} = 2\omega_2 V_{B4B2} = 9.18\ m/s^2$

为 π 为极点，$\overline{\pi b_4} = 50mm$ 代表 a_{B4}

$\mu_a = \frac{\overline{\pi b_4}}{a_{B4}} = \frac{50}{50} = 1\ m/s^2 \cdot mm$

画加速度影像图



由图可得 $\overline{kb_2'} = 5mm$，∴ $a^{t}_{B2} = \mu_a \cdot \overline{kb_2'} = 5m/s^2$

∴ $\varepsilon = \frac{a^{t}_{B2}}{l_{OC}} = \frac{5}{0.108} = 46.3\ rad/s^2$