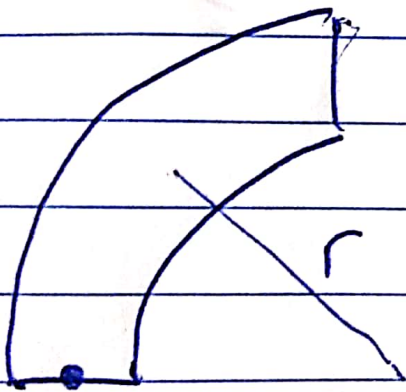


20-P-KM-BK-21



given:

$a_t, s_t, r, v_0 (\text{at rest})$

$$v_t dv_t = a_t ds_t$$

$$\frac{1}{2} v_t^2 = a_t s_t$$

$$v_t = \sqrt{2 a_t s_t}$$

$$a_n = \frac{v_t^2}{r}$$

$$a = \sqrt{a_n^2 + a_t^2}$$