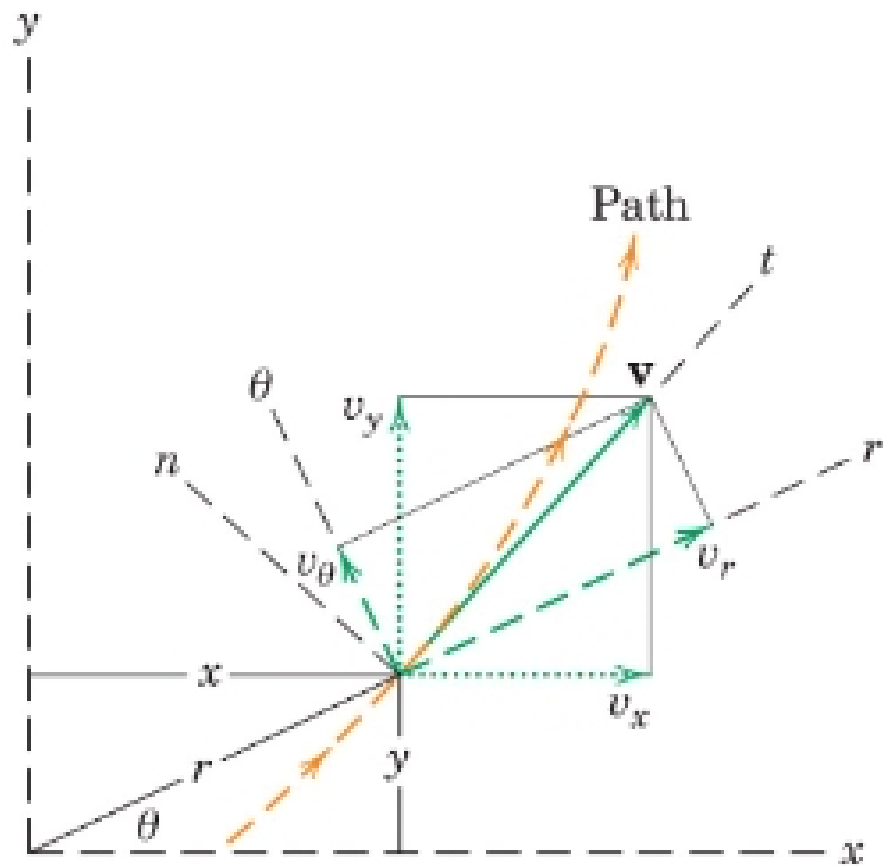


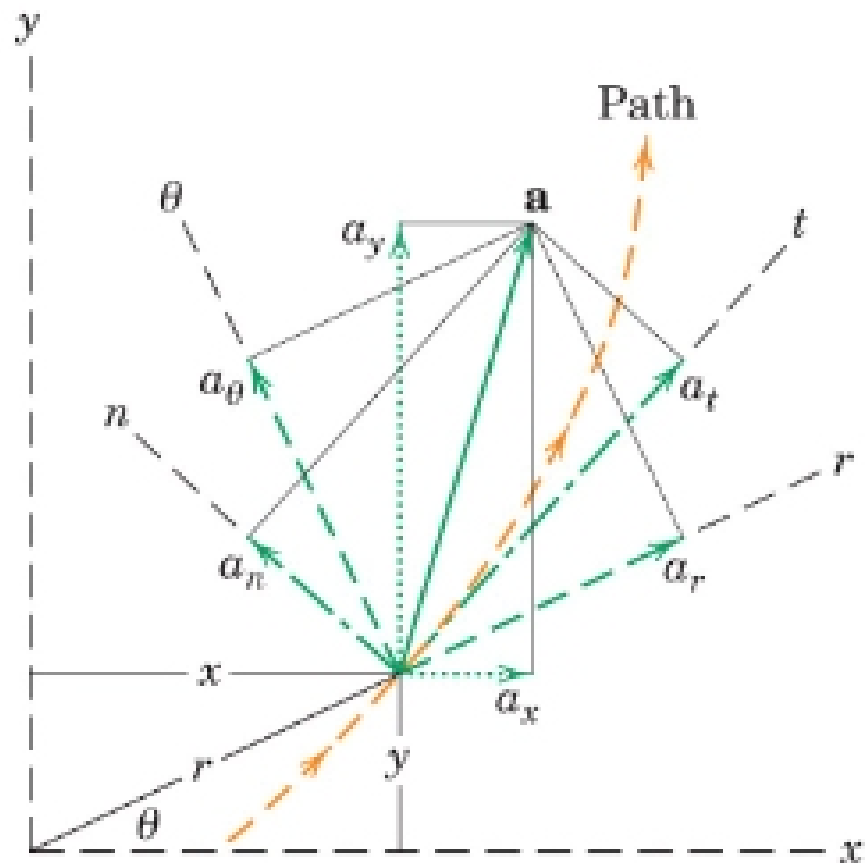
Figure 2-8
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Source: Engineering Mechanics- J.L.Meriam & L.G.Kraige



$v_x = \dot{x}$	$v_y = \dot{y}$
$v_n = 0$	$v_t = v$
$v_r = \dot{r}$	$v_\theta = r\dot{\theta}$

(a) Velocity components



$$a_x = \ddot{x}$$

$$a_y = \ddot{y}$$

$$a_n = v^2/\rho$$

$$a_t = \dot{v}$$

$$a_r = \ddot{r} - r\dot{\theta}^2$$

$$a_\theta = r\ddot{\theta} + 2\dot{r}\dot{\theta}$$

(b) Acceleration components

Figure 3-21b

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