

Braking Distance

- ① longer reaction time \rightarrow longer braking distance
- ② slows your reactions
- ③ drugs, alcohol, some medication
- ④ gravel provides less friction
- ⑤
 - your mental state (tired or alert, drunk or sober, etc.)
 - condition of brakes
 - road conditions

$$\textcircled{6} \quad d = kv^2 \\ = (0.1)(8.3)^2$$

$$d = 6.9 \text{ m}$$

$$d = kv^2 \\ = (0.1)(16.7)^2$$

$$d = 27.9 \text{ m}$$

4 times as much distance

$$\textcircled{7} \quad d = vt + kv^2 \\ = (16.7)(0.5) + (0.06)(16.7)^2$$

$$d = 25.1 \text{ m}$$

You stop before the intersection

$$\textcircled{8} \quad \text{a) } d = kv^2 = (0.1)(13.9)^2 = 19.3 \text{ m}$$

$$\text{b) } d = kv^2 = (0.1)(22.2)^2 = 49.3 \text{ m}$$

$$\text{c) } d = kv^2 = (0.1)(25)^2 = 62.5 \text{ m}$$

$$\text{d) } d = kv^2 = (0.1)(27.8)^2 = 77.3 \text{ m}$$

⑨

$$d = vt + kv^2$$

$$= (30)(1.25) + (0.15)(30)^2$$

$$= 37.5 + 135$$

$$d = 172.5 \text{ m}$$