

18)

$$p \cdot q = |p| \cdot |q| \cdot \cos \theta$$

$$\cos(a-b) = \cos(a) \cdot \cos(b) + \sin(a) \cdot \sin(b)$$

$$e_a = (\cos(a), \sin(a)) \quad e_b = (\cos(b), \sin(b))$$

$$a = (a_1, a_2) \quad b = (b_1, b_2)$$

$$e_a \cdot e_b = (\cos(a) \cdot \cos(b) + \sin(a) \cdot \sin(b))$$

$$e_a \cdot e_b = |e_a| \cdot |e_b| \cdot \cos \theta$$

$$\checkmark \quad \downarrow \\ \text{Unit Vectors} = 1 \quad (a-b)$$

$$|e_a| \cdot |e_b| \cdot \cos(a-b) = \cos(a) \cdot \cos(b) + \sin(a) \cdot \sin(b)$$

$$1 \cdot 1 \cdot \cos(a-b) = \cos(a) \cdot \cos(b) + \sin(a) \cdot \sin(b)$$

$$\cos(a-b) = \cos(a) \cdot \cos(b) + \sin(a) \cdot \sin(b)$$