Technische Mechanik - Uebungen 2

1. a

$$a \cdot a = |a|^2 = 4$$
$$\frac{d(a \cdot a)}{dt} = 0$$
$$\dot{a} \text{ is perpendicular to } \vec{a}$$

2. E, da die Geschwindigkeits Vektoren der beiden Punkten der Welle perpendicular zu E sind.

3.

- $v_E = v_F$ nach links
- $v_D = 0$
- $$\cos 60 = \frac{v_F}{v_{F'}}$$
  $$v_{F'} = ...$$

4. C rotiert in Uhrrichtung

5.

$$\omega = \frac{v_s}{2a}$$
$$v_C = \frac{\sqrt{5} v_s}{2} \text{ senkrecht zu MC}$$

6.

$$v_A = \frac{l \sin\varphi v_C}{r + l\cos\varphi} \text{ Rest on paper...}$$

7.

$$\boldsymbol{v_{A'}} = \boldsymbol{v_{D'}}$$
$$\angle CAD = 90° - \theta (\text{Geometry})$$
$$v_A \cos(90° - \theta) = v_D \cos(\theta)$$
$$v_D = v_A \frac{\cos(90° - \theta)}{\cos(\theta)}$$
$$v_D = v_A \tan(\theta) e_x$$
$$v_G =$$