

## Deux problèmes de mécanique (10 points)

### Partie A. Le cylindre caché (3,5 points)

**A.1** (0.8 pt)

$$b =$$

**A.2** (0.5 pt)

$$I_S =$$

**A.3** (0.4 pt)

$$d =$$

**A.4** (0.7 pt)

$$I_S =$$

**A.5** (1.1 pt)

$$h_2 =$$

$$r_2 =$$

## Part B. La station spatiale tournante (6,5 points)

**B.1** (0.5 pt)

$$\omega_{ss} =$$

**B.2** (0.2 pt)

$$\omega_E =$$

**B.3** (0.6 pt)

$$\omega =$$

**B.4** (0.8 pt)

$$g_E(h) =$$

$$\tilde{\omega}_E =$$

**B.5** (0.3 pt)

$$R =$$

**B.6** (1.1 pt)

$$v_x =$$

$$d_x =$$

**B.7** (1.3 pt)

$$H \geq$$

**B.8** (1.7 pt)

$$x(t) =$$

$$y(t) =$$

