E36 Spring 2005
Homework 1 Solutions
1/1,8; 2/1,5

1/1 $V = \sqrt{10^2 + 24^2} = 26$

$\cos\theta_x = \frac{-10}{26}$, $\theta_x = 112.6°$

$\underline{n} = \frac{\underline{V}}{V} = \frac{-10\underline{i} + 24\underline{j}}{26} = -0.385\underline{i} + 0.923\underline{j}$

1/8 $A = 8.69$, $B = 1.427$

$(A+B) = 8.69 + 1.427 = 10.12$

$(A-B) = 8.69 - 1.427 = 7.26$

$(AB) = (8.69)(1.427) = 12.40$

$(A/B) = 8.69/1.427 = 6.09$

2/1

$F_x = 500\cos 40° = 383$ N

$F_y = -500\sin 40° = -321$ N

$\underline{F} = 383\underline{i} - 321\underline{j}$ N

2/5 $\underline{F} = 1800\left(-\frac{3}{5}\underline{i} - \frac{4}{5}\underline{j}\right) = -1080\underline{i} - 1440\underline{j}$ N