

9/9/94

PROBLEM # 1

E. RATTTS

PROBLEM

Due Date

PROBLEM IDENTIFICATION

NAME

CALCULATE THE NET FORCE [N] OF THE FOLLOWING OBJECT.

PAGE #

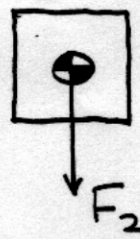
GIVEN

PROBLEM STATEMENT

TOTAL # OF PAGES

$$g = 9.4 \text{ m/s}^2$$

$$F_1 = 1000 \text{ N}$$



$$\ddot{x}_2 = 5.0 \text{ m/s}^2$$

SKETCH SHOWING ALL KNOWN AND UNKNOWN QUANTITIES

THEORY

NET FORCE IS PROPORTIONAL TO THE ACCELERATION OF A GIVEN MASS.

$$F \propto \ddot{x} \text{ OR } F = k \ddot{x}$$

SOLUTION

THEORY

$$\frac{F_1}{\ddot{x}_1} = \frac{F_2}{\ddot{x}_2}$$

STEP-BY-STEP SOLUTION

$$\frac{1000 \text{ N}}{9.4 \text{ m/s}^2} = \frac{F_2}{5.0 \text{ m/s}^2}$$

$$\rightarrow F_2 = 5.0 \text{ m/s}^2 \left( \frac{1000 \text{ N}}{9.4 \text{ m/s}^2} \right)$$

$$= \underline{\underline{532 \text{ N}}}$$

HIGHLIGHT SOLUTION