SPH3U0 Free Body Diagrams and Resultant Forces Date:\_\_\_\_\_\_\_\_

1. What is meant by a “net” or “resultant” force?

2. Draw freebody diagrams (FBD’s) for the objects shown in italics and determine the net force

acting on the object in the vertical and horizontal directions.

a) A store sale ***sign***is held up by two ropes attached to the ceiling each exerting a tension force

of 43 N [up]. The force of gravity acting on the sign is 86 N [down].

***Ye Olde Variety***

***Store***

b) A boy, standing on the side of a frozen pond, uses a rope to pull a sled along the smooth ice

with an applied force of 22.0 N East. The force of gravity on the sled is 87.0 N down and

the ice applies a normal force of 87.0 N up on the sled.

c) Two girls move a ***refrigerator*** along a rough, horizontal floor by applying forces of

75.0 N [W] and 83 N [W] respectively. The motion of the refrigerator along the floor is

opposed by a frictional force of 158 N [E]. The force of gravity acting on the refrigerator is

1.20 x 103 N [down] and the normal force of the floor on the refrigerator is 1.20 x 103 N [up].

Homework: 1) Read PhysicsSource 11 Section 4.1 pages 101-103

2) Questions: P#1,2 pg. 103 , Section Questions #8, 12,13,14, pg 105