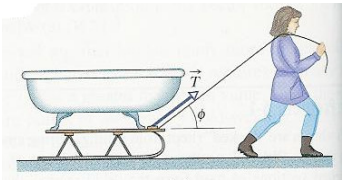
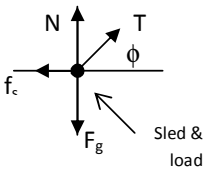
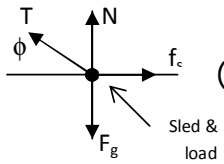
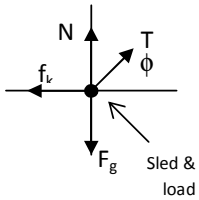
Chapter 6: FORCE AND MOTIN II

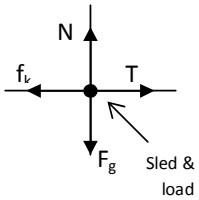
1. In the figure a woman **pulls** a loaded sled of mass **m** along a horizontal surface at **constant velocity**. The coefficient of kinetic friction between the runners and the snow is μ_k .
Which figure shows the correct **free body diagram** for the sled and load?



(a) 

(b) 

(c) 

(d) 

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2. In question 2, The **equation of the forces acting on the load and sled** (from Newton's second law) is:

(a) $\vec{T}+\vec{N}+\vec{F}_g+\vec{f}_k=0$

(b) $\vec{T}+\vec{N}+\vec{F}_g+\vec{f}_s=0$

(c) $\vec{T}+\vec{N}+\vec{F}_g+\vec{f}_k=m\vec{a}$

(d) $\vec{T}+\vec{N}+\vec{F}_g+\vec{f}_s=m\vec{a}$

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3. A **12 N** horizontal force pushes a block of **weight 5 N** to make it move with **constant speed**, the value of the **coefficient of friction** μ_k is:

(a) 2.4 (b) 0.24 (c) 4.1 (d) 0.41

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4. A car has a **weight of 1.1 N** slides on the road with acceleration **a=1.24 m/s^2**, **what is the force of friction** between the car and the road?

(a) - 1.13 N (b) - 11 N (c) - 1.4 N (d) - 0.14 N

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5. A **12 N** horizontal force pushes a block of **weight 5 N** to make it move with **constant speed**, the value of the **coefficient of friction** μ_k is:

(a) 2.4 (b) 0.24 (c) 4.1 (d) 0.41

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6. A block lies on a floor.If the maximum value $f_{x,max}$ of the static frictional force on the block is **10 N**, what is the magnitude of the **frictional force** if the magnitude of the horizontally applied force is **8 N**?

(a) 10 N (b) 8 N (c) 2 N (d) 18 N

7. A **470 N** horizontal force pushes a block of **mass 79 kg** to make it move with **constant speed**, what is the value of the **coefficient of friction** μ_k ?

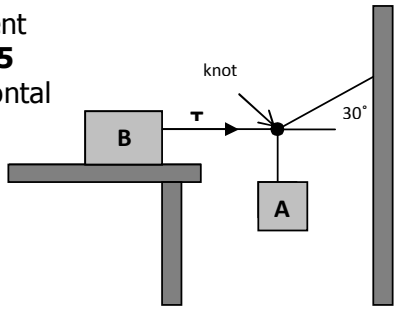
(a) 0.61 (b) 6 (c) 1.6 (d) 0.06

8. A block lies on a floor.If the maximum value $f_{x,max}$ of the static frictional force on the block is **10 N**, what is the magnitude of the frictional force if the magnitude of the horizontally applied force is **12 N**?

(a) 10 N (b) 12 N (c) 2 N (d) 22 N

9. In the figure, **block B weighs 711 N**. The coefficient of static friction between the block and the table is **0.25** assume that the cord between **B** and the **knot** is horizontal

What is the magnitude of the tension T?



(a) 205.2 N (b) 355.5 N (c) 820.1 N (d) 1422 N

10. **In question 9**, the weight of block **A** is :

(a) T cos 30 (b) T sin 30 (c) F_g – T cos 30 (d) F_g – T sin 30

Chapter 6 Test Bank Solutions

1. c
2. a
3. a
4. d
5. a
6. b
7. a
8. c
9. a (T is the tension in the rope attached to the wall not to block B)
10. b (T is the tension in the rope attached to the wall not to block B)