Name   Date

76	Newton's Laws with Friction
	Friction = $F_{(NORMAL)} \times u$ w = mg g = 9.8 m/s^2
	$F = ma$ d=vt $v_f = v_i + at$ d= $v_i t + (1/2)at^2$

1) A 5 kg object has a u of 0.3. What is the force of friction acting on the object?

2) A force of 250 N is applied to a 50 kg object where u is 0.4. What is the net force?

3) A force of 15 N is applied to a 3 kg object. If u is 0.25, what is the acceleration of the object?

Answers: 1) 14.7 N   2) 54 N   3) 2.55 m/s^2

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4) A 10 kg box has a u of 0.4 with a surface. If the box accelerates at 1.08 m/s^2, what was the applied force?

5) A 70 N force is applied to a 15 kg object. If its acceleration is 1.73 m/s^2, what was u?

Answers: 4) 50 N   5) 0.3

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6) A 7 kg object started at rest. A 20 N force was applied and an 8 N force of friction worked against the motion. What was the object's speed 5 s after it started moving?

7) Two forces act on a 50 kg mass. A 20 N force to the east and a 30 N force to the north caused the mass to accelerate. The object started at rest. How far did it travel in 25 s?

Answers: 6) 8.5 m/s   7) 225 m

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8) A 10 kg object was moving at 20 m/s as a 3 N force of friction was working against it. After 35 s, the object has a speed of 40 m/s. What was the applied force?

9) When a car locks its breaks, it is the force of friction that causes it to stop. What force of friction would be needed to bring a 1200 kg car moving at 30 m/s to a stop if the distance available was 125 m?

Answers: 8) 8.7 N   9) – 4320 N