

1.

Unit 4F Work-Energy Theorem Practice Problems

Name:	
-------	--

Work each of the f	ollowing problems.	SHOW ALL	WORK.

OIK C	acif of the following problems: Offer ALL World:
_	toy car moves at a speed of 5 m/s. a. What is the kinetic energy of the car?
b	o. If a child applies a 3 N force for 2 m in the same direction the car is already moving, how much work is done on the car?
c 	c. What is the change in the car's kinetic energy from the applied force?
d	d. What is the final kinetic energy of the car?
e	e. What is the velocity of the car after the child applies the 3 N force?
е	e. What is the velocity of the car after the child applies the 3 N force?



Unit 4F Work-Energy Theorem Practice Problems

Maille	N	ar	n	е
--------	---	----	---	---

Work each of the followin	g problems.	SHOW ALL	WORK.
	•		

	work each of the following problems. Show ALL WORK.
2.	A 3 kg ball is thrown downward at 4 m/s from a height of 1.5 m. a. What is the kinetic energy of the ball as it leaves the thrower's hand?
	b. What force is doing work on the ball as it falls?
	c. How much work is done on the ball as it falls?
	d. What is the final kinetic energy of the ball?
	e. What is the velocity of the ball as it strikes the ground?



Unit 4F Work-Energy Theorem Practice Problems

Nan	ne
-----	----

Work each of the followin	na problems.	SHOW ALL	WORK.

3.	A 75 kg baseball player runs at a velocity of 6 m/s before sliding to a stop at second base. a. What is the kinetic energy of the runner before he begins his slide?
	b. What is the kinetic energy of the runner once he reaches the base?
	c. What is the change in the kinetic energy of the runner?
	d. How much work is done by friction in stopping the runner?
	e. If the runner slides for 2 m, what is the force of friction that acts upon him?



Unit 4F Work-Energy Theorem Practice Problems

Work each of the followin	na problems.	SHOW ALL	WORK.

5.	If the net force applied by the truck ramp in the previous question is -300,000 N, how far along the ramp will the truck move as it stops?
6.	A 40 kg gymnast somersaults into a foam ball pit at a speed of 7 m/s. If the foam applies an average resistive force of 1,000 N, how far into the pit will the gymnast sink before she stops?
7.	A 1.5 kg ball is thrown upward at 10 m/s. What is its velocity when it is 2 m above the release point?