

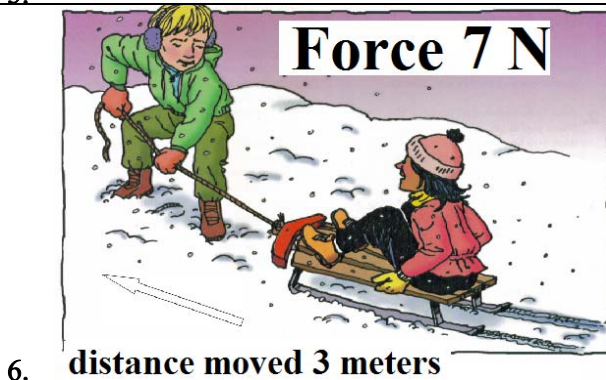
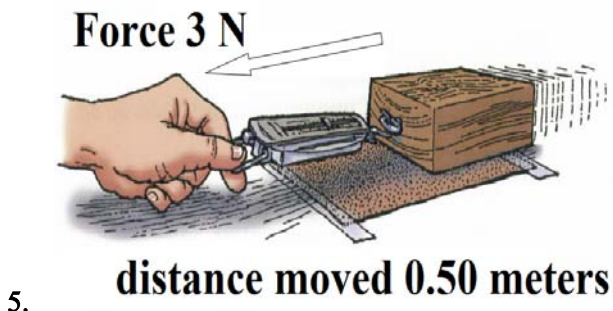
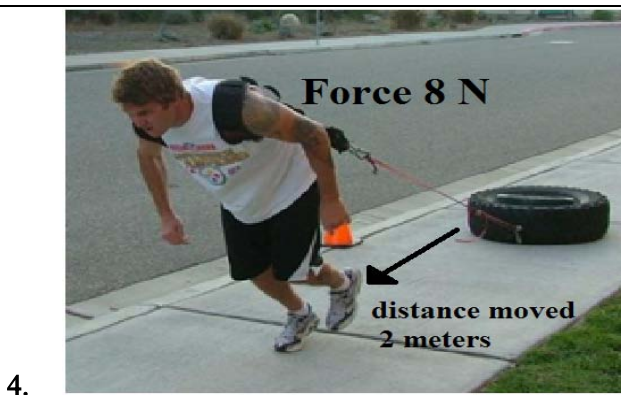
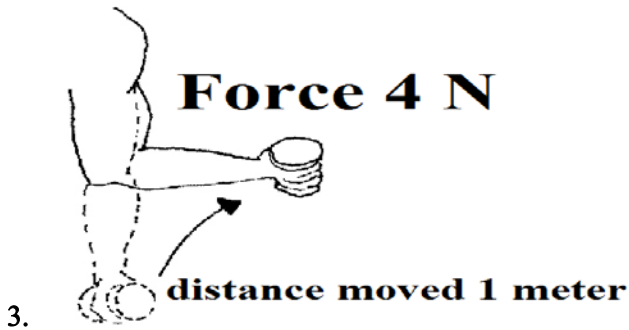
Part 1: Answer the following questions:

1. What is work? _____
2. What is the formula for work? _____ = _____ x _____

Section 1: Picture Problems for Calculating Work

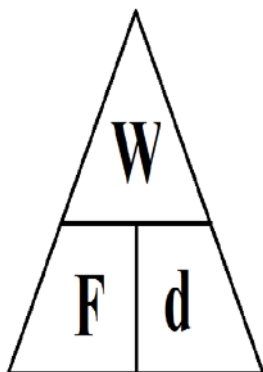
Calculate the amount of work done in the following pictures.

Work out your problems on this side, remember to include the units and show your work!



Section 2: Word Problems for Calculating Work

The Triangle Method:



The triangle method can help you rearrange the formula:

#1 Cover up one of the three letters that you want to solve for.

#2 If the other two are side by side you multiply them to get the third.

#3 If one letter is above the other, divide the letter above by the letter below.

In the work problems you have below, use the wording of the question to decide which formula to use.

If the problem asks:

How much work is done? or What is the work? Use the formula $W = Fd$.

What force was needed? Then use the formula $F = W / d$.

What distance was moved? Then use the formula $d = W / F$.

Show your work on all problems as in the following examples. Use the units to identify the numbers given in the problem. Write down each number and unit and what letter in the formulas it is equal to. Decide what the question is asking for and write the correct formula. Then substitute the right numbers for the parts of the formula and multiply or divide the two numbers to get the answer. **Never forget to put the correct unit after the answer.

7. A Cheetah impacts the ground with a force of 1083 N. If it runs a distance of 30 m, <u>how much work does it do?</u>	
8. A bank robber running from the cops impacts the ground with a force on his heel of 200 N. If he runs a distance of 30 m, <u>how much work does he do?</u>	
9. An average batter hits a ball with a force of 380 N. If the bat contacts the ball for a distance of 50 m, <u>how much work is done?</u>	
10. An alien's flying saucer flies a distance of 20,000 m in a flight with a force of 1000 N, <u>how much work is done?</u>	
11. A bag of candy (that you are not allowed to eat in school) weighs 12 N. If the bag is lifted by a student a distance of 2 m to hide it from the teacher, <u>how much work does the student do?</u>	
12. A sack of potatoes weighs 20 N. If the sack is lifted a distance of 6 m, <u>how much work is done?</u>	
13. A dozen donuts weighs 11 N. If the bag is lifted a distance of 1.5 m, <u>how much work is done?</u>	
14. If a force of 20 N moves a piano 10 meters, <u>what is the work?</u>	
Challenge Question: <i>REMEMBER THE TRIANGLE</i>	
15. If it takes 500 Joules of work to move your best friend 10 m, <u>what force was needed?</u> (What part of the triangle is missing?)	
Challenge Question:	
16. <u>What distance was your lunch moved</u> by a force of 40 N if the work was 600 Joules? (What part of the triangle is missing?)	

Section 3: Chart/Graph Problems for Calculating Work

Complete the chart and graph for the following scenario in the space provided.

Famous singers took part in a fundraiser in Los Angeles called “Batting for a Cure”. The following chart shows the force that each famous singer could produce and the distance that they could hit the ball with the bat.

Questions 17-21: How much work did each famous singer do?

Famous Singer	Force (N)	Distance ball flew (m)	Work (J)
Taylor Swift	5	2	17.
Justin Beiber	9	6	18.
Beyoncé	7	8	19.
Usher	10	15	20.
Pink	8	4	21.

Create a bar graph of the data in the space provided. (22-25)

22. Title:

D Dependent
R Responding
Y Y-axis

23.

25. fill out graph

24.

M Manipulated
I Independent
X X-axis