**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Pulleys Practice**

Examine the following pulley systems:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| IMA= | IMA= | IMA= | IMA= |
| Ideally, how much force would you have to exert to lift the resistance? | Ideally, how much force would you have to exert to lift the resistance? | Ideally, how much force would you have to exert to lift the resistance? | Ideally, how much force would you have to exert to lift the resistance? |
| If needed 15 N of effort to lift, what is your actual MA? | If needed 8 N of effort to lift, what is your actual MA? | If needed 29 N of effort to lift, what is your actual MA? | If needed 20 N of effort to lift, what is your actual MA? |
| Efficiency? (Honors) | Efficiency? (Honors) | Efficiency? (Honors) | Efficiency? (Honors) |

Answer the following questions:

1. Design a pulley system with an IMA of 2.



1. Use the picture to the right to answer a-e.
	1. What kind of pulley is this?
	2. On the diagram, draw where the effort force is located
	3. On the diagram, draw where the resistance force is located
	4. Which direction will the resistance move if you pull down in the direction of the arrow?
	5. Assuming it has an ideal mechanical advantage, if you pull down a distance of 3 m, how far will the resistance move?
2. Using a block and tackle pulley system, determine the number of strands that will be needed to life a weight of 1092 lbs by applying 80 lbs of force. (Remember number of strands=IMA)
3. Using a block and tackle pulley system with 7 strands and an input force of 45 pounds, what is the maximum weight that can be lifted?
4. Using a block and tackle pulley system with 3 strands, how much input force will you need to lift a 2400 N object?