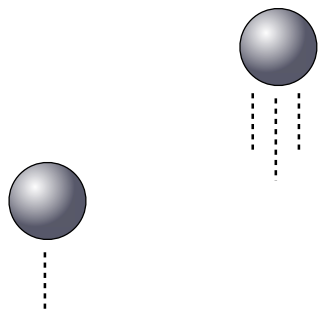


PHYZ SPRINGBOARD: INTRODUCTION TO POWER

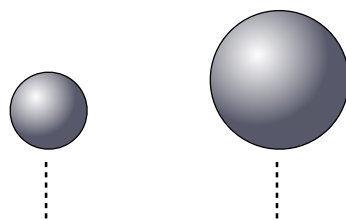


1. Two balls are lifted. The balls have the same mass. One is lifted higher than the other. Both are lifted for the same time. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m	=	m
h	<	h
W	<	W
t	=	t
P	<	P

2. Two balls are lifted. One ball has more mass than the other. Both are lifted to the same height. Both are lifted for the same time. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m		
h		
W		
t		
P		

3. After completing questions 1 and 2, what single conclusion might you make about power?

$$\begin{array}{ll} _ P \propto m & _ P \propto 1/m \\ _ P \propto h & _ P \propto 1/h \\ _ P \propto W & _ P \propto 1/W \\ _ P \propto t & _ P \propto 1/t \end{array}$$

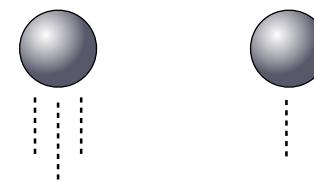
>>> Go to question 4 >>>

4. After completing question 4, what other conclusion might you make about power?

$$\begin{array}{ll} _ P \propto m & _ P \propto 1/m \\ _ P \propto h & _ P \propto 1/h \\ _ P \propto W & _ P \propto 1/W \\ _ P \propto t & _ P \propto 1/t \end{array}$$

6. After completing questions 3 and 5, what might you conclude about power?

4. Two balls are lifted. Both balls have the same mass. Both are lifted to the same height. One is lifted in less time than the other. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m		
h		
W		
t		
P		

1. A motor does 4800 J of work in 60 s. What is the power developed by the motor?

- A. 0.013 W
- B. 8.0 W
- C. 80 W
- D. 2.9 kW
- E. 290 kW

2. If 30 W of power is used to complete a task in 5.0 s, how much work was done?

- A. 0.17 J
- B. 6.0 J
- C. 17 J
- D. 60 J
- E. 150 J

3. A person produces 100 W of power while doing 40 J of work. How long did it take to do the work?

- A. 0.40 s
- B. 2.5 s
- C. 25 s
- D. 40 s
- E. 4000 s