1. The interval between seeing a blow struck by an axe and hearing the sound of the blow was $\frac{1}{5}$ second. How far away was it?

2. How long does it take the sound of a church bell $2\frac{1}{2}$ miles away to strike the ear of a listener?

3. The moon's average distance from the earth is 238,840 miles. How long does it take light from the moon to reach the earth?

4. The light which we shall receive to-night from one of the fixed stars started on its journey over 3000 years ago. Calculate its distance from the earth.

5. In the lever, the power multiplied by its distance from the fulcrum equals the weight multiplied by its distance from the fulcrum. If the fulcrum is in the middle, a power of 10 lb. at one end will raise how many pounds at the other?

6. The long arm of a lever is twice the length of the short arm. A power of 10 lb. at the end of the long arm will lift how much at the end of the short arm?

7. A workman is using a six-foot iron bar. He places it so that the short arm is 4 inches long. If he bears down with a force of 200 lb., how many pounds can he raise? How many if he makes the short arm only two inches?

8. The power is 20 lb., the weight raised is 50 lb. Find the relative length of the two arms of the lever.

9. The radius of a large wheel is 16 inches, the radius of a small wheel 3 inches. One pound at the circumference of the large wheel will exert a power of how many pounds at the circumference of the small wheel?

10. In lifting an anchor which weighs 1000 lb., four men work a capstan having a radius of 2 ft. by bars, the outer ends of which are 6 ft. from the centre of the capstan. How much force does each man exert?

11. A man and a boy support between them on a pole 3 yards long a weight of 100 lb. Where should the weight be placed so that the boy may support 20 lb.?

12. Make problems similar to problems on this page, using the metric system.