

Name: _____

1. If a pair of charges were moved twice as close together, how much larger would the force of attraction be between them?
2. A rubber rod is vigorously rubbed with a piece of fur so that it gains a charge. What happens to give it this charge?
3. What is probably the most significant difference between the electromagnetic force and the gravitational force?
4. A 93.0 g wooden block is set up against a spring. The block rests on a smooth horizontal surface. The block is pushed into the spring, compressing it a distance of 12.0 cm and then released. The spring constant is $k = 278 \text{ N/m}$. What is the speed of the block when it leaves the spring?
5. Find the force between charges of $+100.0 \mu\text{C}$ and $-75.0 \mu\text{C}$. They are 13.5 cm apart.

6. Draw in the lines of force between the two identical charges as shown below.



7. Why are metals good conductors of electricity?

8. A charge of $15.5 \mu\text{C}$ is placed 12.8 cm from a second charge. If the force between the charges is 22.5 N , what is the magnitude of the second charge?

9. An electric field has a value of $7.50 \times 10^5 \text{ N/C}$. A positive test charge of $1.85 \times 10^{-5} \text{ C}$ is placed in the field. What force does the charge experience?

10. Three charges are arranged as shown. What is the magnitude and direction of the force acting on the $7.20 \mu\text{C}$ charge by the other two charges?

