

## 8 Electric charge and Coulomb's law – Part 1 —Answers

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### Answers

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Work through these after you have tried the questions yourself.

**2.1** (a) a push (repulsion); (b) a pull (attraction).

$$\mathbf{2.2} \ F = \frac{9.0 \times 10^9 \times (2.0 \times 10^{-6})(2.0 \times 10^{-6})}{(0.20)^2} = \frac{0.036}{0.04} = 0.90 \text{ N.}$$

**2.3** conductor: a metal (e.g. copper); insulator: plastic (or rubber, glass).

**2.4** the distance triples, so the force becomes  $3^2 = 9$  times smaller.

**2.5** the total charge stays the same –it is only transferred between objects, never created or destroyed.