1. An infinite line has the same set of symmetries as
   A) a sphere   B) an infinite cylinder   C) neither of these

2. A line of length 1m has a charge density of 1C/m. One kilometer away from this line, its field looks just like the field of
   A) an infinite sheet   B) an infinite line   C) a point

3. Six equal charges are evenly distributed on a circle. The electric field at the star, located slightly above that circle, is
   A) zero   B) upward   C) downward

Remember: \[ \vec{E} = \int k \frac{dq}{\vec{R}^3} \vec{R} \]

4. When finding the electric field due to a square of charge, what is \( dq \)?
   A) \( \lambda \, dx \)   B) \( \lambda \, dy \)   C) \( \lambda \, dx \, dy \)   D) \( \sigma \, dx \, dy \)

5. When finding the electric field due to a ring of charge with radius \( R \), using polar coordinates, what is \( dq \)?
   A) \( \lambda \, dx \)   B) \( \lambda \, R \, dr \, d\phi \)   C) \( \lambda \, R \, d\phi \)   D) \( \sigma \, R \, dr \, d\phi \)   E) \( \sigma \, r \, dr \, d\phi \)

6. A line of charge of length \( L \) has uniform charge density \( \lambda \), and lies on the \( y \)-axis, centered on the origin. In this instance, the vector \( \vec{R} \) is equal to
   A) \( h\hat{x} - y\hat{y} \)   B) \( -h\hat{x} - y\hat{y} \)   C) \( x\hat{x} - h\hat{y} \)
   D) \( x\hat{x} + h\hat{y} \)   E) \( h\hat{x} + L\hat{y} \)