PhyzJob: Electric Field Graphing

Felix

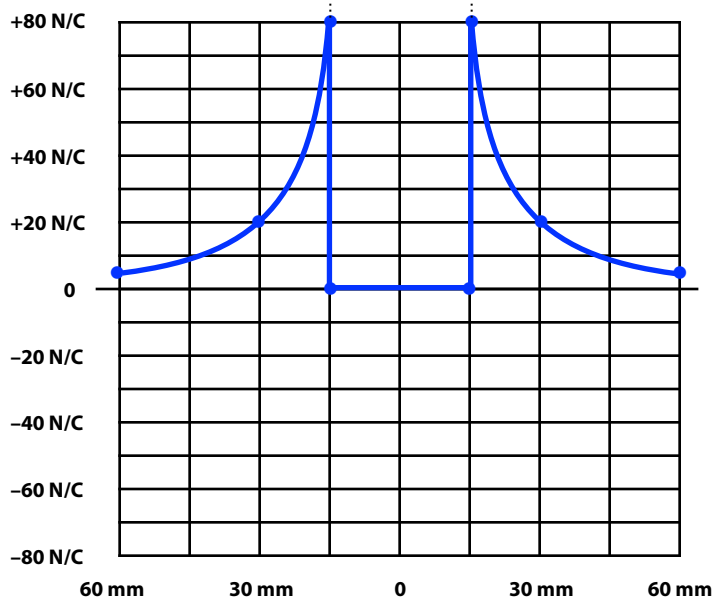
Make a data table, then plot the strength of the electric field *vs*. the distance from the spherical charges shown below. *Hint: the field is symmetrical around the charge and the sphere itself is a conductor.*

d (mm)	E (N/C)
15	+80
30	+20
60	+5

Q = +2 pC
R = 15 mm

Equation you used to find E:

$E = kQ/d^2$



Suppose the graph represented a small track on which a marble could roll. If a marble were placed on the graph 30 mm away from the center of the charge and released, which way would it roll?

Away from the charge.

How does this compare to the motion of a free proton placed 30 mm from the center of the spherical charge?

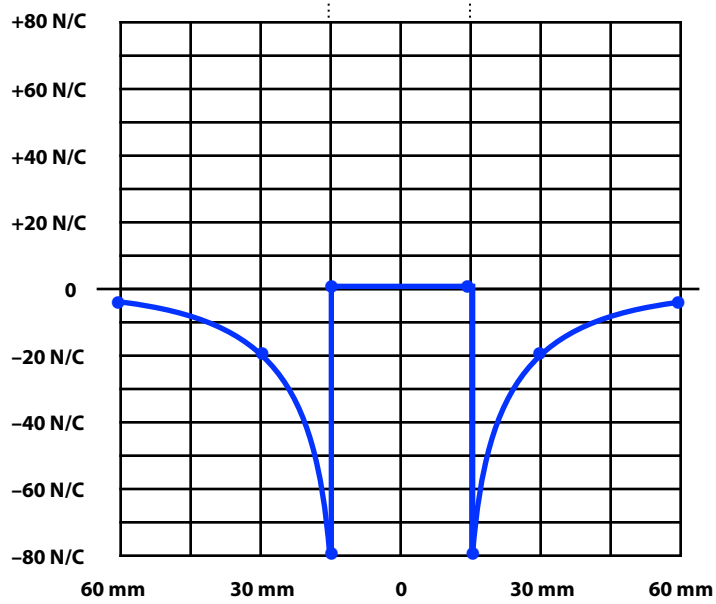
They correspond/agree.

What would an electron placed 30 mm from the spherical charge do if released?

Move toward the charge.

d (mm)	E (N/C)
15	–80
30	–20
60	–5

Q = –2 pC
R = 15 mm



Suppose the graph represented a small track on which a marble could roll. If a marble were placed on the graph 30 mm away from the center of the charge and released, which way would it roll?

Toward the charge.

How does this compare to the motion of a free proton placed 30 mm from the center of the spherical charge?

They correspond/agree.

What would an electron placed 30 mm from the spherical charge do if released?

Move away from the charge.

PhyzJob: Electric Potential Graphing

Felix

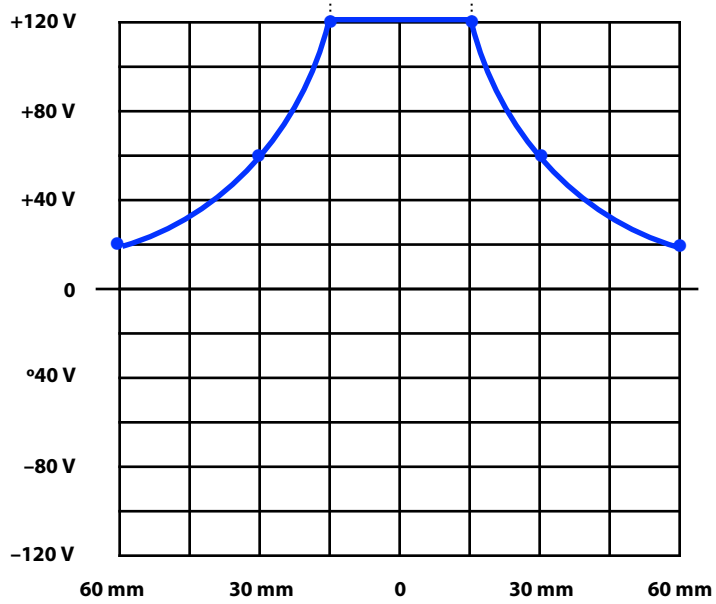
Make a data table, then plot the electric potential *vs*. the distance from the spherical charges shown below. *Hint: the potential is symmetrical around the charge, and the sphere itself is a conductor.*

d (mm)	V (v)
15	+120
30	+60
60	+30

Q = +200 pC
R = 15 mm

Equation you used to find E:

V = kQ/d



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Away from the charge.

How does this compare to the motion of a free proton placed 30 mm from the center of the spherical charge?

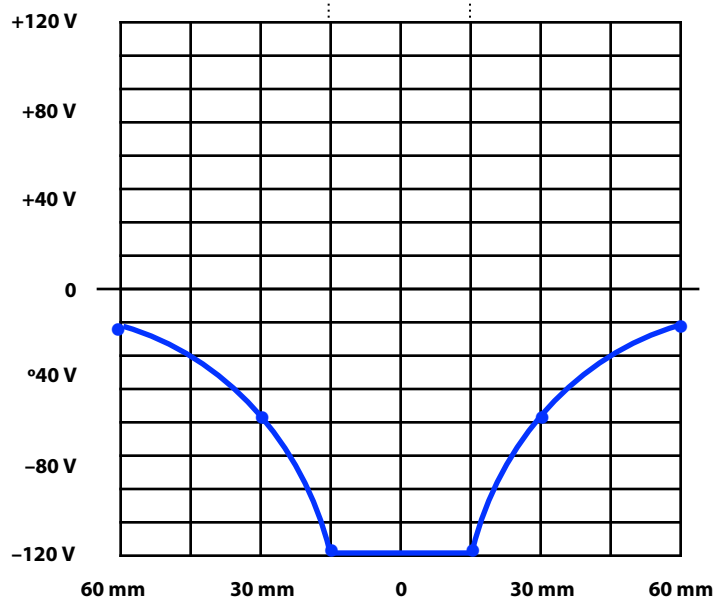
They correspond/agree.

What would an electron placed 30 mm from the spherical charge do if released?

Move toward the charge.

d (mm)	V (v)
15	–120
30	–60
60	–30

Q = –200 pC
R = 15 mm



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Toward the charge.

How does this compare to the motion of a free proton placed 30 mm from the center of the spherical charge?

They correspond/agree.

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Move away from the charge.

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