## **Electric Field Strength**

## Activity 1 – Ranking Tasks Question Group 1 Question 1







## Question Group 2 Question 4







## Question Group 3 Question 7







## Question Group 4 Question 10







## Question Group 5 Question 13







## Question Group 6 Question 16







## Activity 2 – Case Study: A versus B

#### Question Group 7 Question 19

Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



#### **Question 20**

Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



... by a factor of \_\_\_\_\_. 2 3 4 6 9

#### Question Group 8 Question 22

Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location \_\_\_\_\_\_ ...... by a factor of \_\_\_\_\_\_....3691827

#### **Question 24**

Consider two locations – A and B – in the space surrounding two identically-charged Van de Graaff generators. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



## Question Group 9 Question 25

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



... by a factor of \_\_\_\_\_

2 4 8 16

## **Question 26**

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



 The electric field strength is greatest at location \_\_\_\_\_\_.

 ... by a factor of \_\_\_\_\_\_.

 2
 4

 8
 16

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location								
by a	factor	of	·					
2	4	5	8					

# Question Group 10

## Question 28

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location \_\_\_\_\_\_ ... ... by a factor of \_\_\_\_\_\_.

3 6 9 12

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location									
by	a facto	or of							
2	3	6	9	12	18				

#### Question 30

3

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



## Question Group 11 Question 31

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location								
by a factor of								
4/3	3/2	2	3	4	9/2	12		

## **Question 32**

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



## **Question Group 12 Question 33**

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



The electric field strength is greatest at location									
by a	factor	of	·						
4/3	3/2	2	3	4	9/2	12			

## Question 34

4/3

Consider two locations – A and B – in the space surrounding two Van de Graaff generators. The charge on each is different. The relative amount of charge on each (expressed in terms of Q) and the relative distance of each location from the generator's center (expressed in terms of R) are shown.



# Activity 3: Value of E

## Question Group 13 Question 35

The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 100.0 N/mC. Determine the electric field strength (in N/mC), accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 90.0 N/mC. Determine the electric field strength (in N/mC), accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 80.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



## Question Group 14 Question 38

The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 100.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 90.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 80.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



## Question Group 15 Question 41

The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 360.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 160.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength on the surface of a Van de Graaff generator (location X) is 270.0 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



## Question Group 16 Question 44

The value of the electric field strength at location **X** is 23.5 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



The value of the electric field strength at location **X** is 21.2 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



The value of the electric field strength at location **X** is 19.6 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



## Question Group 17 Question 47

The value of the electric field strength at location **X** is 38.6 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



The value of the electric field strength at location **X** is 17.2 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



The value of the electric field strength at location **X** is 29.5 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) on the surface of the Van de Graaff generator (location **Y**).



# Question Group 18 Question 50

The value of the electric field strength at location X is 14.5 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength at location X is 10.5 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.



The value of the electric field strength at location X is 17.2 N/mC. Determine the electric field strength (in N/mC, accurate to the second decimal place) at location Y.

