

ELECTRICITY & MAGNETISM

NAME:  
DATE:

NOTES: ALL FIRST RUNS MUST INCLUDE AN EXPLANATION FOR EACH MATHEMATICAL STEP.  
†REFERS TO AN ADDITIONAL AP PHYSICS II DERIVATION.

DERIVATION: RING

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
 \_\_\_\_ INTEGRAL SET-UP  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 40 TOTAL

DERIVATION: SOLID DISK ( $0 \rightarrow R$ )

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
 \_\_\_\_ INTEGRAL SET-UP  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 41 TOTAL

DERIVATION: VERTICAL LINE ( $-\infty \rightarrow \infty$ )

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
 \_\_\_\_ INTEGRAL SET-UP  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 38 TOTAL

DERIVATION: SOLID DISK ( $0 \rightarrow \infty$ )

BASED ON SOLID DISK ( $0 \rightarrow R$ )

\_\_\_\_ COPIES  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 15 TOTAL

DERIVATION: †VERTICAL LINE (ASYMMETRIC)  
 VERTICAL LINE ( $-L/2 \rightarrow L/2$ )

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
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 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 26 TOTAL

DERIVATION: HOLLOW DISK ( $R_1 \rightarrow R_2$ )

BASED ON SOLID DISK ( $0 \rightarrow R$ )

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 18 TOTAL

DERIVATION: HORIZONTAL LINE

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
 \_\_\_\_ INTEGRAL SET-UP  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 38 TOTAL

DERIVATION: PLATE ( $-\infty \rightarrow \infty$ )

\_\_\_\_ COPIES  
 \_\_\_\_ PICTURES  
 \_\_\_\_ BACKGROUND INFORMATION  
 \_\_\_\_ INTEGRAL SET-UP  
 \_\_\_\_ INTEGRATION & SOLUTION  
 \_\_\_\_ DESCRIPTION OF MATHEMATICAL STEPS

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\_\_\_\_ / 40 TOTAL