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| **Practice with Volume and Surface Area**[**Topic Index**](http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/indexAS2.htm)**|**[**Algebra Index**](http://www.regentsprep.org/Regents/math/ALGEBRA/math-ALGEBRA.htm)**|**[**Regents Exam Prep Center**](http://regentsprep.org/) |

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 **Answer the following questions dealing with solids.
Grab your calculator.**

Answers use = 3.141592654, the full calculator entry on the TI-83+/84+.

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| **1**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/can_.gif | Soda is sold in aluminum cans that measure 6 inches in height and 2 inches in diameter.  How many cubic inches of soda are contained in a full can?(Round answer to the *nearest tenth of a cubic inch*.) |   | **Choose:**Top of Form 12.0  18.8 24.0 75.4 Bottom of Form  |
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| **2**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/beds.gifPine bark mulch 6 inches deep is to be spread in each of the beds shown above.  Mulch is sold by the cubic yard.  To the *nearest* *cubic yard*, how much mulch will need to be purchased. | **Choose:**Top of Form 5  7  16  27Bottom of Form |
| http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/ag00142_.gif |
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| **3**. |

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| http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/forest.gif | Ed works for an environmental protection agency which deals with land areas that have been contaminated by toxic waste.  The contaminated soil covers an area of 1.62 acres.  Ed must remove the top 18 inches of soil in this area. |

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|  1 acre = 43,560 square feet1 square yard = 9 square feet**a.** What is the area of contaminated soil in square yards? | **Choose:a.**Top of Form 1600.0   3920.4  7840.8 10890 Bottom of Form**b**.Top of Form 1600.0   3920.4  7840.8  10890 Bottom of Form**c.**Top of Form 160   392  393  784 Bottom of Form |
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| **b.**  What is the total volume of the contaminated soil in cubic yards? |
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| **c.** If each truck can haul 10 cubic yards of soil, how many fulltruckloads of contaminated soil will Ed be removing? |
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| **4**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/dieorange.gif | A company manufactures large dice for children's games.  The dice are cubes with one side measuring 1.2 inch in length.  The dice are formed when a liquid plastic in is poured into a mold of the die.  The company uses trays that contain one dozen die molds in each tray.  If the liquid plastic is measured in cubic inches, how much liquid plastic is needed to fill one tray?  (Round answer to the *nearest tenth of a cubic inch*) |   | **Choose:**Top of Form 14.4  17.3  20.7 172.8 Bottom of Form  |
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| **5**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/pill.gif**Extra Challenging** | A pharmacist is filling medicine capsules.  The capsules are cylinders with half spheres on each end.  If the length of the cylinder is 12 mm and the radius is 2 mm, how many cubic mm of medication can one capsule hold?  (Round answer to the *nearest tenth of a cubic mm*.) |   | **Choose:**Top of Form 32.7  150.7   184.3  202.6 Bottom of Form  |
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| **6**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/container.gif  |  **a.** Find the volume, to the *nearest tenth of a cubic foot,* of this container           **b.**  Find the surface area, to the *nearest tenth of a square foot*, of this container assuming it has a closed top and bottom.   |   | **Choose:a.**Top of Form 4712.4  2650.7   1767.1  1178.1 Bottom of Form**b.**Top of Form 132.7  471.2   628.3  1178.1 Bottom of Form |
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| **7**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/container2.gif | Find the surface area of this container assuming it has an open top.  The bottom is closed. (Round answer to the *nearest tenth of a sq. cm*.) |   | **Choose:**Top of Form 301.6  351.9   251.3  421.6 Bottom of Form  |
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| **8**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/brownbox.gif | A box needs to be covered in brown paper for mailing.  If the box measures 3 feet by 3 feet by 2 feet, what is the surface area of the box that will need to be covered?  The box is closed.   |   | **Choose:**Top of Form 18 sq. ft. 42 sq. ft.   48 sq. ft. 54 sq, ft. Bottom of Form |
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| **9**. | When buying a room air conditioner, it is important to purchase a unit that is neither too big nor too small for the room.  If the unit is too large, it will cool too quickly and will not remove humidity from the air, thus wasting money and energy.  If the unit is too small, it will run continually without ever cooling to the desired temperature, again wasting energy and money.**a.)** Find the total cubic feet of living space for the bedroom below. The ceiling is 7 feet high.**b.)** Which of these 3 air conditioning models would be the best purchase for this bedroom?Model A:  for rooms 900 to 1100 cubic feetModel B:  for rooms 1100 to 1300 cubic feetModel C:  for rooms 1300 to 1500 cubic feet

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| http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/bedroom.gif | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/air.gif |

 |   |   **Choose:a.**Top of Form 924 1124  1176  1476Bottom of Form**b.**Top of Form A  B  CBottom of Form |
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| **10**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/redbox2.jpg | A box is to be wrapped in a shinyred decorative paper.  The box is 9 inches long, 5 inches wide,and 4 inches high. | **Choose:a)**Top of Form112 sq. in.180 sq. in.  202 sq. in.260 sq, in. Bottom of Form |
|   | a.)  What is the minimum amount of decorative paper needed to        cover the box?b.)  If the box contains confetti, how many cubic inches of      confetti are needed to fill the box? | **Choose:b)**Top of Form112 cu. in.180 cu. in.  202 cu. in.260 cu. in. Bottom of Form |
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| **11**. | http://www.regentsprep.org/Regents/math/ALGEBRA/AS2/PracSo17.gif |  A cylindrical container has a diameter of 12 inches and a height of 15 inches, as illustrated in the diagram.  What is the volume of this container to the *nearest tenth of a cubic inch*? |   | **Choose:**Top of Form 6,785.8  4,241.2 2,160.0 1,696.5 Bottom of Form  |
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