MATHEMATICS 7.5

Strand: Measurement

Standards of Learning Blueprint Summary

	5 1	<i></i>
Reporting Category	Grade 7 SOL	Number of Items
Number, Number Sense, Computation	7.1(a-e), 7.2, 7.3(a-b), 7.4	16
& Estimation		
Measurement & Geometry	7.5(a-c), 7.6, 7.7, 7.8	13
Probability, Statistics, Patterns,	7.9, 7.10, 7.11(a-b), 7.12,	21
Functions, & Algebra	7.13(a-b), 7.14(a-b), 7.15(a-	
-	b), 7.16(a-e)	
Excluded from Testing		
Number of Operational Items		50
Number of Field-Test Items		10
Total Number of Items on Test		60

Virginia Mathematics SOL Test Cut Scores

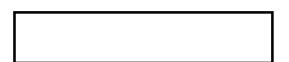
	Failing Scores		Passing Scores			
Test	Basic		Proficient		Advanced	
1030	# correct	% correct	Minimum # correct	Minimum % correct	Minimum # correct	Minimum % correct
Math 3	16 of 40	40%	26 of 40	65%	36 of 40	90%
Math 4	17 of 50	34%	31 of 50	62%	45 of 50	90%
Math 5	18 of 50	36%	31 of 50	62%	45 of 50	90%
Math 6	16 of 50	32%	28 of 50	56%	45 of 50	90%
Math 7	17 of 50	34%	31 of 50	62%	45 of 50	90%
Math 8	17 of 50	34%	31 of 50	62%	46 of 50	92%
Algebra I	n/a	n/a	25 of 50	50%	45 of 50	90%
Geometry	n/a	n/a	25 of 50	50%	44 of 50	88%
Algebra II	n/a	n/a	27 of 50	54%	43 of 50	86%



Checkpoint Items

1.	Directions:	After sh	owing your	thinking,	write you	ır answei	in the box.	Round t	o the
	nearest hun	ıdredth.	Include the	unit of m	easure.				

What is the surface area of a tissue box with a length of 8.2 inches, a width of 4.3 inches and a height of 3.5 inches?





2.	Directions: After showing your thinking, write your answer in the box. Include the unit of measure with your answer.
	You are building a rectangular flower box for the garden. The base is to be 3 feet long and 2 feet wide. The box needs to be 2 feet tall. There will not be a top on the box. How many square feet of wood will you need to build the box?



3.	Directions: After showing your thinking, write your answer in the box. Round to the nearest tenth. Include the unit of measure with your answer.
	A glass maker is creating a cylindrical vase. The vase is 10 inches tall and the base is 4 inches at the widest part. The vase will not have a top. What is the total square inches of glass used for the vase?



4.	Directions: After showing your thinking, write your answer in the box. Include the union of measure with your answer.
	How much cereal can a box hold that is 11 inches wide, 15 inches tall and 3 inches deep?



5.	Directions: After showing your thinking, write your answer in the box.
	A rectangular swimming pool is 25 feet long and 20 feet wide. The depth of the pool is 5 feet. Each 100 cubic feet of water needs \$15 worth of chlorine. When the pool is full, what is the cost for chlorine?

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6.	Directions: After showing your thinking, write your answer in the box. Include the unit of measure with your answer.
	What is the volume of a city water tank that is 80 feet tall and has a radius of 25
	feet?



nearest tenth. Include the unit of measure with your answer.
A canister of potato sticks is 10 inches tall and has a radius of 2 inches. The canister was filled to the top. Jake ate $\frac{1}{3}$ of the potato sticks. How many cubic inches of potato sticks are left in the canister?



8.	Directions: After showing your thinking, write your answer in the box. Round to the nearest tenth. Include the unit of measure in your answer.
	A can of paint has a diameter of 12 inches and is 15 inches tall. Half of the paint has already been used. How much paint is left in the can?



9. Directions: Circle your choice. You must circle all correct answers.

What is the result of multiplying the height of a rectangular prism by a scale factor of $\frac{1}{2}$?

The volume will be doubled

The volume will be decreased by $\frac{1}{2}$

The surface area will be doubled

The surface area will be decreased by $\frac{1}{2}$



Checkpoint Solutions

SOL 7.5 The student will

- a) describe volume and surface area of cylinders;
- b) solve practical problems involving the volume and surface area of rectangular prisms and cylinders; and
- c) describe how changing one measured attribute of a rectangular prism affects its volume and surface area.

Essential Knowledge and Skills

- Determine if a practical problem involving a rectangular prism or cylinder represents the application of volume or surface area
- b. Find the surface area of a rectangular prism
- c. Solve practical problems that require finding the surface area of a rectangular prism
- d. Find the surface area of a cylinder
- e. Solve practical problems that require finding the surface area of a cylinder
- f. Find the volume of a rectangular prism
- g. Solve practical problems that require finding the volume of a rectangular prism
- h. Find the volume of a cylinder
- Solve practical problems that require finding the volume of a cylinder
- j. Describe how the volume of a rectangular prism is affected when one measured attribute is multiplied by a scale factor. Problems will be limited to changing attributes by scale factors only
- k. Describe how the surface area of a rectangular prism is affected when one measured attribute is multiplied by a scale factor. Problems will be limited to changing attributes by scale factors only

Item	Answer/Solution	SOL/EKS Code	Essential Knowledge and Skills
1	158.02 in ²	7.5ab	Find the surface area of a rectangular prism
2	26 ft ²	7.5bc	Solve practical problems that require finding the surface area of a rectangular prism
3	138.2 in ²	7.5be	Solve practical problems that require finding the surface area of a cylinder
4	495 in ³	7.5af	Find the volume of a rectangular prism
5	\$375	7.5bg	Solve practical problems that require finding the volume of a rectangular prism
6	157,000 ft ³	7.5ah	Find the volume of a cylinder
7	83.7 in ³	7.5bi	Solve practical problems that require finding the volume of a cylinder
8	847.8 in^3	7.5bi	Solve practical problems that require finding the volume of a cylinder
9	The volume will be decreased by $\frac{1}{2}$	7.5cj	Describe how the volume of a rectangular prism is affected when one measured attribute is multiplied by a scale factor. Problems will be limited to changing attributes by scale factors only

