

10.8 Geometry and Measurement

Chapter 10: Final Cumulative Review

Name: _____

Date: _____

Class/Period: _____

10.289 Directions:

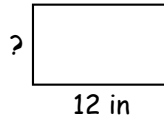
Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A square has side length 11 cm. Write its area using s^2 , expand the power as repeated factors, and evaluate the area. Then find the perimeter and label both answers with appropriate units.

10.290 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

The rectangle has area 96 square inches and length 12 inches. Find width.



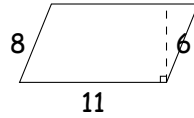
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10.291 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find the parallelogram area; identify the perpendicular height.



10.292 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A parallelogram has area 84 and base 12. Find height.

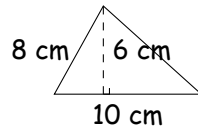
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10.293 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find triangle area and explain why the slanted side is extra.



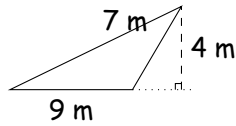
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10.294 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find the obtuse-triangle area using the exterior altitude.



10.295 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A triangle has area 54 and base 12. Find height.

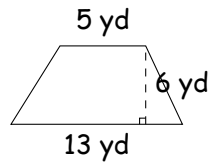
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10.296 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find trapezoid area.



10.297 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A trapezoid has bases 8 and 14 and area 66. Find height.

10.298 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Explain the trapezoid formula as height times average base.

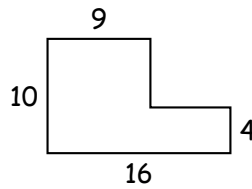
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10.299 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find the L-shape area in two ways.



10.300 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A $14\text{ m} \times 9\text{ m}$ wall has two $1.5\text{ m} \times 2\text{ m}$ windows and a $1\text{ m} \times 2.2\text{ m}$ door. Find paint area.

10.301 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Tile costs \$4.80 per square foot for a $12.5\text{ ft} \times 9.2\text{ ft}$ floor. Find cost before waste.

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10.302 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A $20\text{ ft} \times 12\text{ ft}$ pool has a 3-ft border around it. Find border area.

10.305 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A composite shape has area 120; an 8×3 hole is removed. Find fraction and percent remaining.

10.303 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Explain how adding pieces and subtracting cutouts can produce the same composite area.

10.306 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A square and a non-equilateral triangle each have perimeter 36. Find the square area, then explain why the triangle area cannot be determined from perimeter alone.

10.304 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A square frame has outer side 18 cm and width 2 cm. Find frame area.

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10.307 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A garden consists of a 12×18 rectangle joined to a trapezoid with bases 8,14 and height 6. Find total area.

10.308 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

The diagram incorrectly labels a slanted side of a parallelogram as its height. Redraw the figure with a correct altitude and explain why the altitude must be perpendicular to the base.



10.309 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Classify cube, rectangular prism, triangular prism, square pyramid, and triangular pyramid by bases and faces.

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10.310 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A solid has 6 vertices, 9 edges, and 5 faces. Identify it and verify Euler $V-E+F=2$.

10.311 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A convex polyhedron has 8 vertices and 12 edges. Use Euler to find faces.

10.312 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Decide whether the arrangement folds into a cube and explain overlap or gaps.



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10.313 Directions:

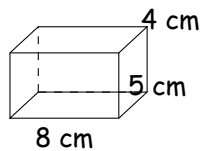
Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Draw a different valid cube net.

10.314 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find rectangular-prism surface area.



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10.315 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A cube has side length $s = 7.5$ cm. Use $6s^2$ to find its surface area and s^3 to find its volume. Explain what the exponents 2 and 3 represent in the two measurements.

10.317 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A triangular prism has right-triangle base legs 6 and 8, hypotenuse 10, and length 12. Find surface area.

10.316 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

An open-top box measures $10 \times 6 \times 4$ inches. Find material area.

10.318 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A box has surface area 94 and dimensions $3 \times 5 \times h$. Find h .

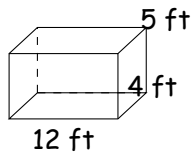
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10.319 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Find rectangular-prism volume.



10.320 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A prism has base area 36 and length 8. Find volume and explain $V=Bh$ in words.

10.321 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A triangular prism has a right-triangle base with legs 9 and 12 units and a prism length of 7 units. Find its volume.

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10.322 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A trapezoidal prism has base trapezoid bases 5,11, height 4, and length 9. Find volume.

10.325 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A cube's side length changes from s to $2s$. Explain why each face area is multiplied by 2^2 while the volume is multiplied by 2^3 . Then evaluate both scale factors.

10.323 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A rectangular prism has volume 420, length 12, width 5. Find height.

10.326 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A solid model is enlarged by a scale factor of 3. Its original surface area is 18 square units and its original volume is 10 cubic units. Use 3^2 and 3^3 to find the new surface area and volume.

10.324 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

How many cubes with side length $\frac{1}{2}$ unit fit exactly in a $3 \times 2 \times 1.5$ box? Use two methods.

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10.327 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Every length becomes 150 percent of original. Find percent increase in volume.

10.329 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Compare one cube of side 4 with eight cubes of side 2: total volume and total surface area.

10.328 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A tank measures $2.5 \text{ m} \times 1.8 \text{ m} \times 1.2 \text{ m}$ and 75 percent full. Find water volume.

10.330 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Design a whole-number rectangular prism with volume 120 and least surface area among factor triples you test.