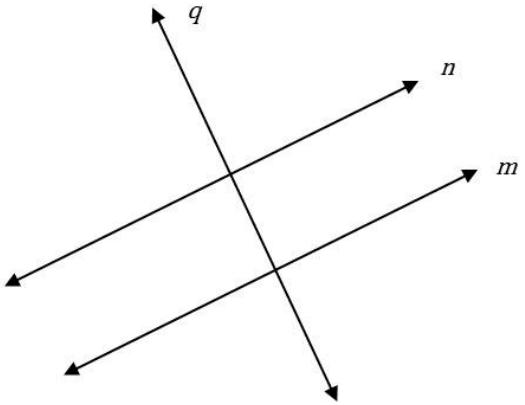
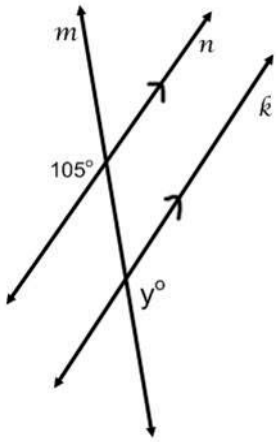
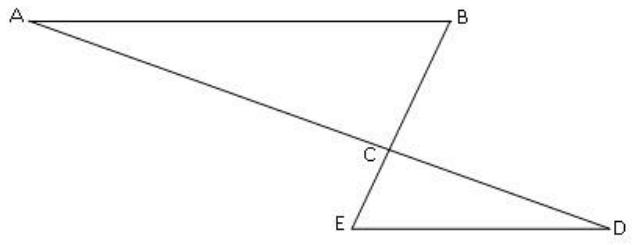
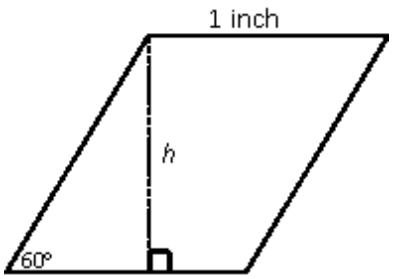
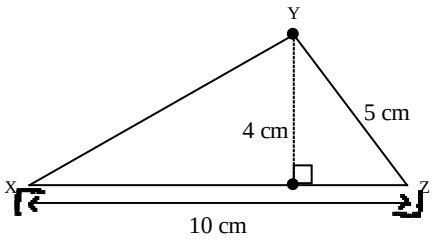
Geometry EOC Review Dec 3 - 7 Name:

G.1.C - Use deductive reasoning to prove that a valid geometric statement is true.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	2	9. $\triangle LPT$ is an obtuse scalene triangle. If $\angle P$ is the obtuse angle in $\triangle LPT$, which of the following is not a valid conclusion? a. $m\angle L + m\angle T \leq m\angle P$ b. $m\angle P + m\angle T \leq 90°$ c. $m\angle L + m\angle T \leq 90°$ d. $m\angle L + m\angle P + m\angle T \leq 180°$	a. student may think that an obtuse angle is ³ 90° which could make this statement true and/or the student didn't realize that it was an *obtuse* scalene triangle. b. **correct** c. student may think that an obtuse angle is ³ 90° d. student may not understand the context of the problem and found a valid conclusion
G.2.A Know, prove, and apply theorems about parallel and perpendicular lines.			
	2	Mary knows that line m is $\perp$ to line q. Mary says that line m is $\parallel$ to line n.  Is Mary correct? · If Mary is correct, show why she is correct using words, numbers, and/or diagrams. · If Mary is incorrect, what additional information does Mary need in order to state that line m is $\parallel$ to line n?	The student shows understanding of ***theorems about parallel and perpendicular lines*** by doing the following: · Writes that Mary is incorrect · Shows that line n is also $\perp$ to line q

G.2.B Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	1	In the figure below, the value of y =_____.  	y=105

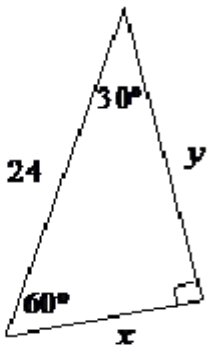
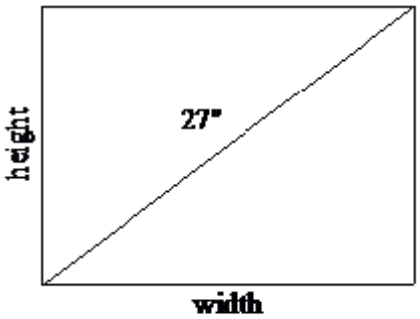
Geometry EOC Review Dec 10 - 14 Name:

Standard	Difficulty	Question/Task	Answer/Work
G.3.A - Know, explain, and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.			
	2	5. Triangle ABC is similar to triangle DEC. Which statement is true:  a. AB ∥ DE b. BE ⊥ DA c. ∡A ≅ ∡E d. ∡C = 90°	a. **correct** b. student is making an assumption based on the diagram that cannot be proven with the information given c. student didn't correctly 'align' the similar triangles, therefore the congruency statement is false d. student is making an assumption based on the diagram that cannot be proven with the information given
G.3.C - Use the properties of special right triangles (30 - 60 - 90 and 45 - 45 - 90) to solve problems.			
	1	11. A rhombus is shown below. Which of these is closest to the height, h, of the rhombus?  a. 0.5 b. 0.9 c. 1.0 d. 1.7	a) found the side opposite the 30° angle b**) correct** c) found the hypotenuse - may have a misconception about properties of altitudes of rhombuses. d) didn't understand the relationship of the $\sqrt{3}$ in the 30-60-90 relationship

G.3.D - Know, prove, and apply the Pythagorean Theorem and its converse.			
	1	10. Triangle *XYZ* is shown below. What is the length of $\overline{XY}$?  a. 9 cm b. $\sqrt{65}$ cm c. $\sqrt{75}$ cm d. $\sqrt{116}$ cm	a. Assume that the missing side has be shorter than 10 cm, but longer than 5 cm, not seeing the connection to using the Pythagorean Theorem b**. correct** c. Assumed that *Y* was a 90° angle d. Didn't account that 10 cm was the length *XZ* and to get the answer you need to subtract out the piece from the height of the triangle to *Z*.
	1	In a right triangle, one leg measures 24cm and the other leg measures 10cm. What is the length of the hypotenuse?	Hypotenuse = 26cm.

Geometry EOC Review Dec 17 - 21 Name:

G.3.C Use the properties of special right triangles (30°–60°–90° and 45°–45°–90°) to solve problems.
G.3.D Know, prove, and apply the Pythagorean Theorem and its converse.
G.3.E Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.
G.7.B Select and apply strategies to solve problems.

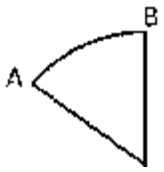
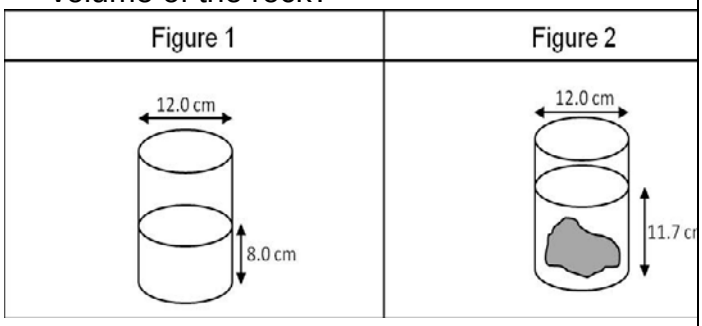
Standard	Difficulty	Question/Task	Answer/Work
	2	2. Yield sign has a shape of an equilateral triangle with side length of 36 inches. What is the height of the sign? a. 20.8 inches tall b. 25.5 inches tall c. 31.2 inches tall d. 50. 9 inches tall	a) divided 36 by root 3 b) 18 * root 2 c) **correct answer** d) 36 * root 2
	2	3. Determine the exact values for the sides ***x*** and ***y*** in the given triangle.  a. x = 12, $y = 12\sqrt{3}$ b. $x = 12\sqrt{3}$, y = 12 c. x = 12, $y = 12\sqrt{2}$ d. $x = 12\sqrt{2}$, y = 12	**a) Correct answer** b) misconception about the 30-60-90 rule c) confused with the 45-45-90 rule d) reversed sides and confused the 45-45-90 rule
	2	4. The size of a TV screen is given by the length of its diagonal. The screen aspect ratio is the ratio of its width to its height. The screen aspect ratio of a standard TV screen is 4:3. What are the width and height of a 27" TV screen?  a. width: 21.6 in., height: 16.2 in. b. width: 16.2 in., height: 21.6 in. c. width: 40.8 in., height: 30.6 in. d. width: 30.6 in., height: 40.8in.	a) **correct answer** b) incorrect ratio (3:4) c) incorrectly squared sides of right triangle (forgot to square 3 & 4) d) incorrect ratio and incorrectly squared sides of right triangle
	2	The Yield sign has a shape of an equilateral triangle with side length of 40 inches. Will a rectanglular metal sheet of 32 x 40 inches be large enough to cut out one sign? Explain your reasoning.	2 pts * finds the correct height of the triangle (34.6 inches) and * Answers NO and explains that the height of the triangle (34") is longer than the 32" dimension

			of the sheet metal.

Geometry EOC Review Nov 26 - 30 Name:

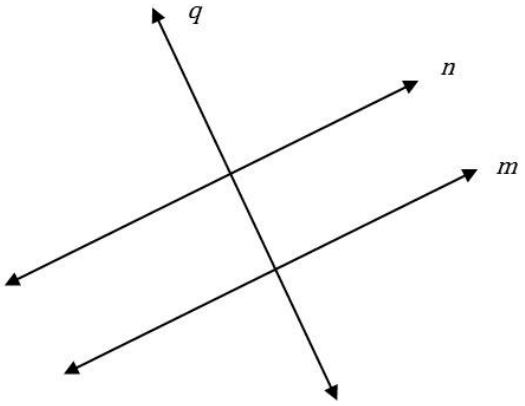
G.4.A Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	1	6. Find the equation for a line that passes through the points (4,-8) and is perpendicular to the line $y = 4x + 3$ a. $y = 4x + 24$ b. $y = -\frac{1}{4}x - 2$ c. $y = \frac{1}{4}x - 9$ d. $y = -\frac{1}{4}x - 7$	A) The student found the line parallel to the given line through the given point. B) The student plugged in 4 for y and -8 for x instead of the 4 for x and -8 for y. C) The student used the positive reciprocal instead of the negative reciprocal. D) **Correct**
G.4.B - Determine the coordinates of a point that is described geometrically.			
	1	The city of Belmont plans to build a circular fountain, which has a water spout in the center, in front of City Hall. The endpoints of a diameter of the fountain are at (17, 3) and (5, 14) on the planning grid. Determine the position of the ordered pair of the water spout.	The ordered pair of the position of the water spout = (11, 8.5) or equivalent If a student writes an answer of (6, 5.5) or (6, -5.5), the student is finding the distance between each coordinate, not the actual location of the coordinate.

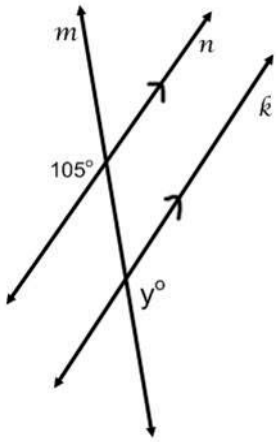
Geometry EOC Review Jan 7 - 11 Name:

Standard	Difficulty	Question/Task	Answer/Work
G.6.A - Derive and apply formulas for arc length and area of a sector of a circle.			
	1	12. The diagram below represents a sector of a circle. Which of the following is closest to the arc length of *AB* if the central angle is 75□and the radius of the circle is 5 inches?  a. 6.5 inches b. 16.4 inches c. 3.3 inches d. 23.6 inches	a. **correct** b. found the area of the sector c. didn't account for the diameter of the circle, only the radius d. didn't find the ratio of the amount of circle represented - used the 75 as a percent
G.6.C - Apply formulas for surface area and volume of three-dimensional figures to solve problems.			
	2	8. In Figure 1 a cylinder with a diameter of 12 centimeters if filled with water to a height of 8 centimeters. In Figure 2 a rock is submerged in the cylinder. Which of the following is closest to the volume of the rock?  a. 44 cm^3 b. 140 cm^3 c. 418 cm^3 d. 1,323 cm^3	a. student incorrectly calculated the volume of a cylinder, but did find the difference in the displacement b. student incorrectly calculated the volume of the cylinder, and didn't account c. **correct** d. student found the volume of the water and the rock
	2	balls are sold in packages of five. The packaging is a rectangular prism, with the golf balls stacked on top of one another. Once the package is fully enclosed, how much space is un-used inside the package? (The diameter of a golf ball is 1.68 inches)	The student shows understanding of a*pplying formulas for surface area and volume of three-dimensional figures to solve problems* by

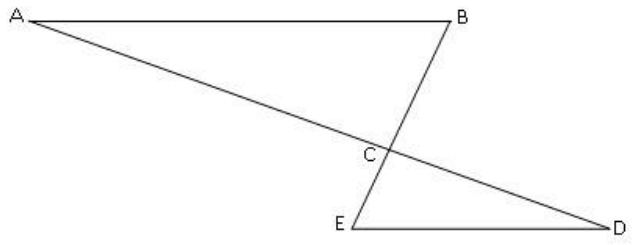
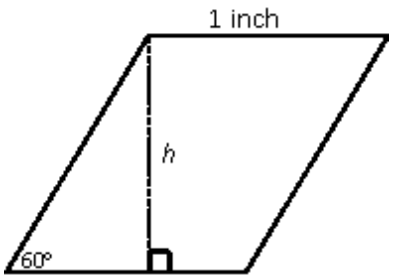
		How much space is un-used inside the golf ball package (to the nearest tenth)? Show your work using words, numbers, and/or diagrams.	doing the following: · Calculates the volume of the prism (packaging) · Calculates the volume of all the golf balls · Writes 11.3 cubic inches ($\pm .2$)
G.6.D Predict and verify the effect that changing one, two, or three linear dimensions has on perimeter, area, volume, or surface area of two- and three-dimensional figures.			
	2	7. Mason City has a circular sandbox in the park. Last month, they expanded the sandbox so it has a diameter that is twice as long as the old sandbox. The height did not change. How much more sand can the new sandbox hold? a. 2 times more sand b. 3 times more sand c. 4 times more sand d. 8 times more sand	a) student may just apply the linear change without taking into account the area change by the diameter b) student may assume that it is three times bigger based on volume being 3-dimensional c) **correct** d) student may assume that the "twice" as long is applied by 2^3 based on the volume
G.6.F Solve problems involving conversions within and between systems.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	2	1. The area of a room is 81 square feet. Determine the area of the room in square yards. a. 9 square yards b. 27 square yards c. 240 square yards d. 720 square yards	a) **correct answer** b) they divide by 3 because they used the linear conversion c) students might multiply by linear conversion factor d) student multiply by correct conversion factor

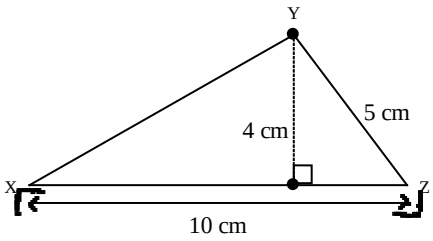
Geometry EOC Review Dec 3 - 7 Name:

Standard	Difficulty	Question/Task	Answer/Work
G.1.C - Use deductive reasoning to prove that a valid geometric statement is true.			
	2	9. $\triangle LPT$ is an obtuse scalene triangle. If $\angle P$ is the obtuse angle in $\triangle LPT$, which of the following is not a valid conclusion? a. $m\angle L + m\angle T < m\angle P$ b. $m\angle P + m\angle T < 90°$ c. $m\angle L + m\angle T < 90°$ d. $m\angle L + m\angle P + m\angle T < 180°$	a. student may think that an obtuse angle is ³ 90° which could make this statement true and/or the student didn't realize that it was an *obtuse* scalene triangle. b. **correct** c. student may think that an obtuse angle is ³ 90° d. student may not understand the context of the problem and found a valid conclusion
G.2.A Know, prove, and apply theorems about parallel and perpendicular lines.			
	2	Mary knows that line m is $\perp$ to line q. Mary says that line m is $\parallel$ to line n.  Is Mary correct? · If Mary is correct, show why she is correct using words, numbers, and/or diagrams. · If Mary is incorrect, what additional information does Mary need in order to state that line m is $\parallel$ to line n?	The student shows understanding of ***theorems about parallel and perpendicular lines*** by doing the following: · Writes that Mary is incorrect · Shows that line n is also $\perp$ to line q

G.2.B Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	1	In the figure below, the value of y =_____.  	y=105

Geometry EOC Review Dec 10 - 14 Name:

Standard	Difficulty	Question/Task	Answer/Work
G.3.A - Know, explain, and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.			
	2	5. Triangle ABC is similar to triangle DEC. Which statement is true:  a. AB ∥ DE b. BE ⊥ DA c. ∡A ≅ ∡E d. ∡C = 90°	a. **correct** b. student is making an assumption based on the diagram that cannot be proven with the information given c. student didn't correctly 'align' the similar triangles, therefore the congruency statement is false d. student is making an assumption based on the diagram that cannot be proven with the information given
G.3.C - Use the properties of special right triangles (30 - 60 - 90 and 45 - 45 - 90) to solve problems.			
	1	11. A rhombus is shown below. Which of these is closest to the height, h, of the rhombus?  a. 0.5 b. 0.9 c. 1.0 d. 1.7	a) found the side opposite the 30° angle b**) correct** c) found the hypotenuse - may have a misconception about properties of altitudes of rhombuses. d) didn't understand the relationship of the $\sqrt{3}$ in the 30-60-90 relationship

G.3.D - Know, prove, and apply the Pythagorean Theorem and its converse.			
	1	10. Triangle *XYZ* is shown below. What is the length of $\overline{XY}$?  a. 9 cm b. $\sqrt{65}$ cm c. $\sqrt{75}$ cm d. $\sqrt{116}$ cm	a. Assume that the missing side has be shorter than 10 cm, but longer than 5 cm, not seeing the connection to using the Pythagorean Theorem b**. correct** c. Assumed that *Y* was a 90° angle d. Didn't account that 10 cm was the length *XZ* and to get the answer you need to subtract out the piece from the height of the triangle to *Z*.
	1	In a right triangle, one leg measures 24cm and the other leg measures 10cm. What is the length of the hypotenuse?	Hypotenuse = 26cm.

Geometry EOC Review Dec 17 - 21 Name:

G.3.C Use the properties of special right triangles (30°–60°–90° and 45°–45°–90°) to solve problems.
G.3.D Know, prove, and apply the Pythagorean Theorem and its converse.
G.3.E Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.
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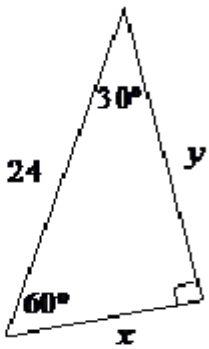
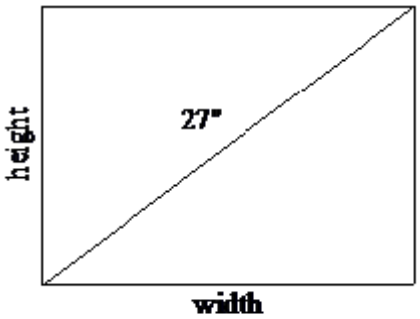
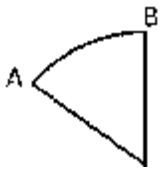
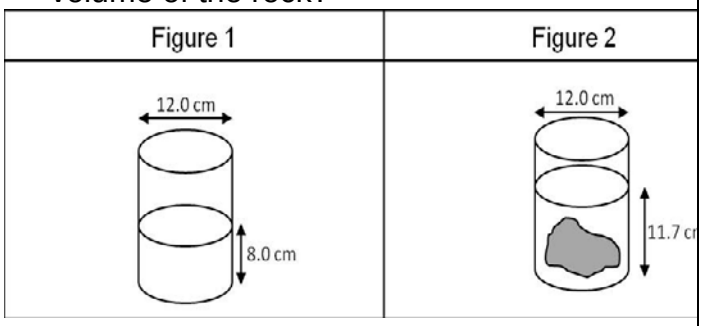
Standard	Difficulty	Question/Task	Answer/Work
	2	2. Yield sign has a shape of an equilateral triangle with side length of 36 inches. What is the height of the sign? a. 20.8 inches tall b. 25.5 inches tall c. 31.2 inches tall d. 50. 9 inches tall	a) divided 36 by root 3 b) 18 * root 2 c) **correct answer** d) 36 * root 2
	2	3. Determine the exact values for the sides ***x*** and ***y*** in the given triangle.  a. x = 12, $y = 12\sqrt{3}$ b. $x = 12\sqrt{3}$, y = 12 c. x = 12, $y = 12\sqrt{2}$ d. $x = 12\sqrt{2}$, y = 12	**a) Correct answer** b) misconception about the 30-60-90 rule c) confused with the 45-45-90 rule d) reversed sides and confused the 45-45-90 rule
	2	4. The size of a TV screen is given by the length of its diagonal. The screen aspect ratio is the ratio of its width to its height. The screen aspect ratio of a standard TV screen is 4:3. What are the width and height of a 27" TV screen?  a. width: 21.6 in., height: 16.2 in. b. width: 16.2 in., height: 21.6 in. c. width: 40.8 in., height: 30.6 in. d. width: 30.6 in., height: 40.8in.	a) **correct answer** b) incorrect ratio (3:4) c) incorrectly squared sides of right triangle (forgot to square 3 & 4) d) incorrect ratio and incorrectly squared sides of right triangle
	2	The Yield sign has a shape of an equilateral triangle with side length of 40 inches. Will a rectanglular metal sheet of 32 x 40 inches be large enough to cut out one sign? Explain your reasoning.	2 pts * finds the correct height of the triangle (34.6 inches) and * Answers NO and explains that the height of the triangle (34") is longer than the 32" dimension of the sheet metal.

Geometry EOC Review Nov 26 - 30 Name:

G.4.A Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	1	6. Find the equation for a line that passes through the points (4,-8) and is perpendicular to the line $y = 4x + 3$ a. $y = 4x + 24$ b. $y = -\frac{1}{4}x - 2$ c. $y = \frac{1}{4}x - 9$ d. $y = -\frac{1}{4}x - 7$	A) The student found the line parallel to the given line through the given point. B) The student plugged in 4 for y and -8 for x instead of the 4 for x and -8 for y. C) The student used the positive reciprocal instead of the negative reciprocal. D) **Correct**
G.4.B - Determine the coordinates of a point that is described geometrically.			
	1	The city of Belmont plans to build a circular fountain, which has a water spout in the center, in front of City Hall. The endpoints of a diameter of the fountain are at (17, 3) and (5, 14) on the planning grid. Determine the position of the ordered pair of the water spout.	The ordered pair of the position of the water spout = (11, 8.5) or equivalent If a student writes an answer of (6, 5.5) or (6, -5.5), the student is finding the distance between each coordinate, not the actual location of the coordinate.

Geometry EOC Review Jan 7 - 11 Name:

Standard	Difficulty	Question/Task	Answer/Work
G.6.A - Derive and apply formulas for arc length and area of a sector of a circle.			
	1	12. The diagram below represents a sector of a circle. Which of the following is closest to the arc length of *AB* if the central angle is 75□and the radius of the circle is 5 inches?  a. 6.5 inches b. 16.4 inches c. 3.3 inches d. 23.6 inches	a**. correct** b. found the area of the sector c. didn't account for the diameter of the circle, only the radius d. didn't find the ratio of the amount of circle represented - used the 75 as a percent
G.6.C - Apply formulas for surface area and volume of three-dimensional figures to solve problems.			
	2	8. In Figure 1 a cylinder with a diameter of 12 centimeters if filled with water to a height of 8 centimeters. In Figure 2 a rock is submerged in the cylinder. Which of the following is closest to the volume of the rock?  a. 44 cm^3 b. 140 cm^3 c. 418 cm^3 d. 1,323 cm^3	a. student incorrectly calculated the volume of a cylinder, but did find the difference in the displacement b. student incorrectly calculated the volume of the cylinder, and didn't account c. **correct** d. student found the volume of the water and the rock
	2	balls are sold in packages of five. The packaging is a rectangular prism, with the golf balls stacked on top of one another. Once the package is fully enclosed, how much space is un-used inside the package? (The diameter of a golf ball is 1.68 inches)	The student shows understanding of a*pplying formulas for surface area and volume of three-dimensional figures to solve problems* by

		How much space is un-used inside the golf ball package (to the nearest tenth)? Show your work using words, numbers, and/or diagrams.	doing the following: · Calculates the volume of the prism (packaging) · Calculates the volume of all the golf balls · Writes 11.3 cubic inches ($\pm .2$)
G.6.D Predict and verify the effect that changing one, two, or three linear dimensions has on perimeter, area, volume, or surface area of two- and three-dimensional figures.			
	2	7. Mason City has a circular sandbox in the park. Last month, they expanded the sandbox so it has a diameter that is twice as long as the old sandbox. The height did not change. How much more sand can the new sandbox hold? a. 2 times more sand b. 3 times more sand c. 4 times more sand d. 8 times more sand	a) student may just apply the linear change without taking into account the area change by the diameter b) student may assume that it is three times bigger based on volume being 3-dimensional c) **correct** d) student may assume that the "twice" as long is applied by 2^3 based on the volume
G.6.F Solve problems involving conversions within and between systems.			
Standard	**Difficulty**	**Question/Task**	**Answer/Work**
	2	1. The area of a room is 81 square feet. Determine the area of the room in square yards. a. 9 square yards b. 27 square yards c. 240 square yards d. 720 square yards	a) **correct answer** b) they divide by 3 because they used the linear conversion c) students might multiply by linear conversion factor d) student multiply by correct conversion factor