2nd 9 weeks Review Guide

Accelerated

2nd Period

Solve Linear Equations in one variable
Module 5

1. Solve $x + \frac{4}{15} = \frac{2}{3}$

$- 4/15 \quad -4/15$ Inverse operation

(subtract 4/15 on both sides.)

x = 10/15 - 4/15 Find common denominator

x = 6/15 Subtract

x = 2/5 Reduce

Solve Linear Equations in one variable
Module 5

2. Solve $2 - z = 4.5$

$-2 \qquad -2$ Inverse operations (Subtract by 2)

$\frac{-z}{-1} = \frac{2.5}{-1}$ Inverse operations (Divide by -1)

$z = -2.5$

Solve Linear Equations in one variable Module 5

3. Find the value of *t* is the solution for the equation $9.45 = t + 3.7$?

$9.45 = t + 3.7$

$-3.7 \qquad -3.7$ Inverse Operations (Subtract 3.7 both sides)

$5.75 = t$

Solve Linear Equations in one variable
Module 5

4. What is the value of *k* for this equation:

$$\frac{k}{1.6} = 13$$

$\times 1.6 \quad \times 1.6$ Inverse Operation (multiply by 1.6)

$$k = 20.8$$

Solve Linear Equations in one variable
Module 5

5. What is the value for *m* for this equation:

$3m - 6.8 = 31$

$+6.8 \quad +6.8$ Inverse Operations (Add 6.8 both sides)

$\frac{3m}{3} = \frac{37.8}{3}$ Inverse Operations (Divide 3 both sides)

$m = 12.6$

Solve Linear Equations in one variable
Module 5

6. Solve

$(6d) + 4 + (5d) - (2d) = 58.$ Combine Like Terms

$9d + 4 = 58$

$-4 \quad -4$ Inverse operation (subtract 4 both sides)

$\frac{9d}{9} = \frac{54}{9}$ Inverse operation (divide 9 both sides)

$d = 6$

Solve Linear Equations in one variable
Module 5

7. Solve for *x*.

$4x - 8 = 16$

$+8 \quad +8$

$\frac{4x}{4} = \frac{24}{4}$

$x = 6$

Solve Linear Equations in one variable
Module 5

$\frac{8.\ h}{2} + \frac{h}{5} = 14$

Find common denominator

$\frac{5h}{10} + \frac{2h}{10} = 14$

$\frac{7h}{10} = 14$ Combine Like Terms

$7h = 140$ Multiply by 10 on both sides

$h = 20$ Divide by 7 on both sides

Solve Linear Equations in one variable Module 5

9. Solve

$9y - 6 + y + 8 = 42$.

$10y + 2 = 42$ Combine like terms

$10y = 40$ Subtract 2 both sides

$y = 4$ Divide 10 both sides

Solve Linear Equations in one variable Module 5

10. Chris has a job selling newspapers every morning. He receives a base pay of $10 per day and also gets 15 cents for every paper he sells. One morning he made $16.45. How many papers did he sell?

$10 + 0.15p = 16.45$ (Set up equation)

$0.15p = 6.45$ (Subtract 10 both sides)

$p = 43$ (Divide by 0.15 both sides)

Solve Linear Equations in one variable Module 5

11. Solve

$2(s - 4) - 7 = -19$

$2s - 8 - 7 = -19$ (Distributive Property)

$2s - 15 = -19$ (Combine Like Terms)

$2s = -4$ (Add 15 both sides)

$S = -2$ (Divide by 2 both sides)

Solve Linear Equations in one variable Module 5

12. $\frac{n}{2} + 7 = 22.$

$\frac{n}{2} = 15$ (Subtract 7 both sides)

$n = 30$ (Multiply by 2 both sides)

Solve Linear Equations in one variable Module 5

13. Solve

$12x + 15 = 24 - 6x$.

$18x = 9$ (Use inverse operations to but like terms on the same side.)

Added 6x both sides; subtracted 15 both sides.

$X = 1/2$ (Divide by 18 both sides)

Solve Linear Equations in one variable
Module 5

14. $\frac{3w}{2} + \frac{1}{2} = w + 4.$

$\frac{3w + 1}{2} = w + 4$ Rewrite

$3w + 1 = 2w + 8$ Multiply both sides by 2

$1w = 7$ Inverse operations to put like terms on same side.

Subtract 2w both sides; subtract 1 both sides.

$w = 7$ Identity Property

Solve Linear Equations in one variable Module 5

15.Solve

$$\frac{M + 12}{2} = 4$$

$M + 12 = 8$ Multiply both sides by 2

$M = -4$ Subtract both sides by 12

Solve Linear Equations in one variable Module 5

16. Solve

$-5y + 8 = -10 + y$

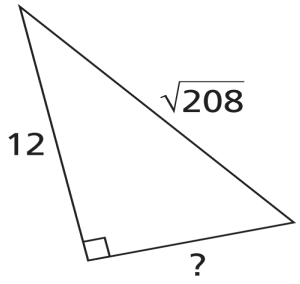
$-6y = -18$ Inverse operations to get like terms on same side.

Subtract y on both sides; subtract 8 both sides

$y = 3$ Divide by sides by -6

Geometric Applications of Exponents Module 6

1. Find the missing length.



$a^2 + b^2 = c^2$

$12^2 + b^2 = \sqrt{208}^2$

$144 + b^2 = 208$

$b^2 = 64$

$b = \sqrt{64}$

$b = 8$

Geometric Applications of Exponents Module 6

2. Find the hypotenuse of the right triangle that has legs of 5 ft and 7 ft.

$a^2 + b^2 = c^2$

$5^2 + 7^2 = c^2$

$25 + 49 = c^2$

$74 = c^2$

$\sqrt{74} = c$

$8.6 = c$

Geometric Applications of Exponents Module 6

3. A 15-foot ladder is leaning against a wall. If the top of the ladder is 14.5 feet up the wall, how far is the base of the ladder on the ground from the wall? Round to the nearest tenth.

$a^2 + b^2 = c^2$

$14.5^2 + b^2 = 15^2$

$210.25 + b^2 = 225$

$14.75 = b^2$ (Subtract 210.25 from both sides)

$\sqrt{14.75} = b$

$3.8 = b$

Geometric Applications of Exponents Module 6

4. Find the length of the hypotenuse of the right triangle. Round to the nearest tenth.

$a^2 + b^2 = c^2$

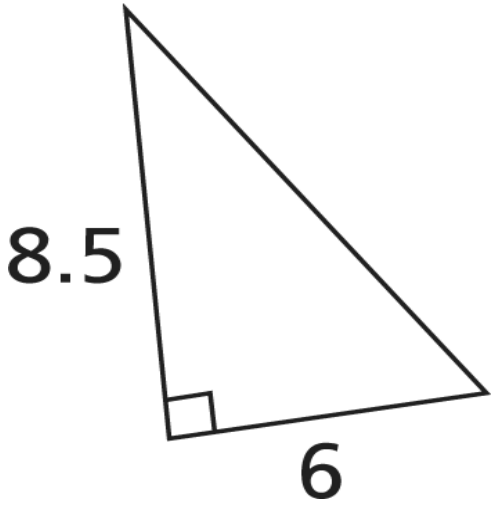
$8.5^2 + 6^2 = c^2$

$72.25 + 36 = c^2$

$108.25 = c^2$

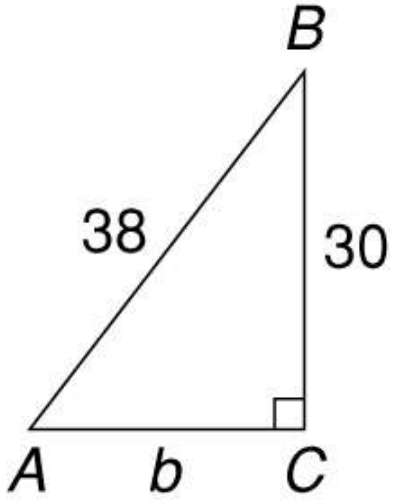
$\sqrt{108.25} = c$

$10.4 = c$



Geometric Applications of Exponents Module 6

5. Find the missing side.



$a^2 + b^2 = c^2$

$30^2 + b^2 = 38^2$

$900 + b^2 = 1444$

$b^2 = 544$

$b = \sqrt{544}$

$b = 23.3$

Geometric Applications of Exponents Module 6

6. Maria left her house and walked 2 miles north. Then she turned and walked 3 miles west. How far is Maria from her house? Round your answer to the nearest tenth.

$a^2 + b^2 = c^2$

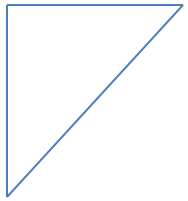
$3^2 + 2^2 = c^2$

$9 + 4 = c^2$

$13 = c^2$

$\sqrt{13} = c$

$3.6 = c$



Geometric Applications of Exponents Module 6

Tell whether the side lengths form a right triangle. $a^2 + b^2 = c^2$

7. $8^2 + 9^2 = 10^2$

$64 + 81 = 100$

$145 \neq 100$ No

8. $12^2 + 14^2 = 15^2$

$144 + 196 = 225$

$340 \neq 225$ No

Geometric Applications of Exponents Module 6

Tell whether the side lengths form a right triangle. $a^2 + b^2 = c^2$

9. $14^2 + 15^2 = 21^2$

$196 + 225 = 441$

$421 \neq 441$ No

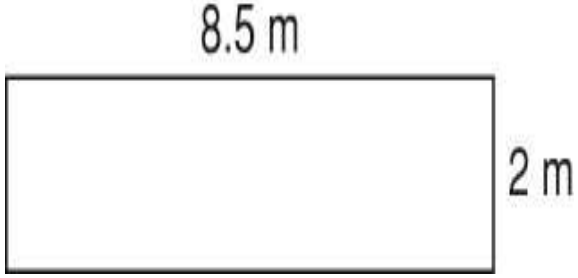
10. $17^2 + 19^2 = 25^2$

$289 + 361 = 625$

$650 \neq 625$ No

Perimeter, Circumference, and Area Module 12 (7^{th} Grade)

1. Find the perimeter of the rectangle.



8.5 + 8.5 +2 +2 = 21m

Perimeter, Circumference, and Area Module 12 (7^{th} Grade)

2. Find the circumference of a circle with the radius of 5.5 in. Use 3.14 for π. Round the nearest tenth.

$C = \prod d$

$c = 3.14(5.5 \times 2)$

$C = 3.14(11)$

$C = 34.5$ in.

Perimeter, Circumference, and Area Module 12 (7^{th} Grade)

3. The diameter of a circle is 14 m. What is the area of the circle?

$A = \pi r^2$

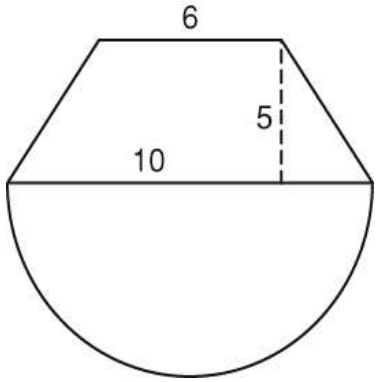
$A = 3.14(7)^2$

$A = 3.14(49)$

$A = 153.9$

Perimeter, Circumference, and Area Module 12 (7^{th} Grade)

4. Find the area



½ Circle

$A = \pi r^2$

$A = 3.14 (5)^2$

$A = 3.14(25)$

$A = 78.2$

$A = 78.2/2$ (for ½ circle)

$A = 39.25$

Trapezoid

$A = \frac{1}{2}(b_1 + b_2)h$

$A = \frac{1}{2} (6 + 10)(5)$

$A = \frac{1}{2}(16)(5)$

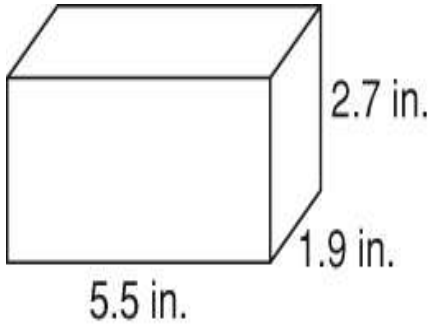
$A = 8(5)$

$A = 40$

Whole figure A = 39.25 + 40 = 79.25

Volume and Surface Area
Module 13 (7th Grade)

1. Find the volume of the prism to the nearest tenth.



V = Bh

B = lw h = 2.7

B = 5.5(1.9)

B = 10.45

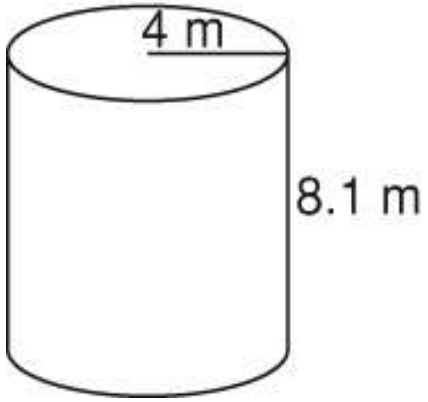
V = 10.45(2.7) = 28.2

Volume and Surface Area
Module 13 (7^{th} Grade)

2. Calculate the volume of the cylinder to the nearest tenth. Use 3.14 for p.

$V = Bh$

$B = 3.14r^2$ $\qquad$ $h = 8.1$



$B = 3.14(4)^2$

$B = 3.14(16)$

$B = 50.24$

$V = 50.24(8.1) = 406.94$

Volume and Surface Area
Module 13 (7^{th} Grade)

3. Find the surface area.

$S = 2B + Ph$

$B = lw$ $\quad P = 2+2+6+6 = 16$ $\quad h = 4$

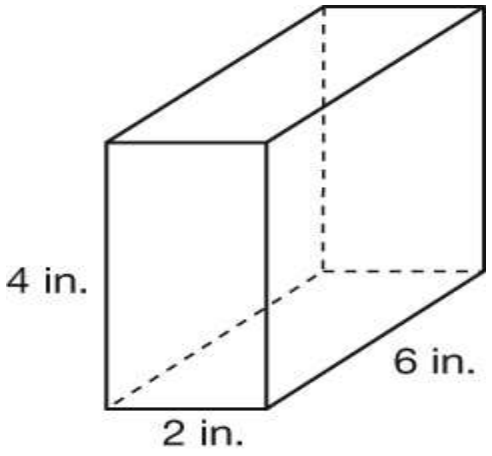
$B = 2(6)$

$B = 12$

$S = 2(12) + 16(4)$

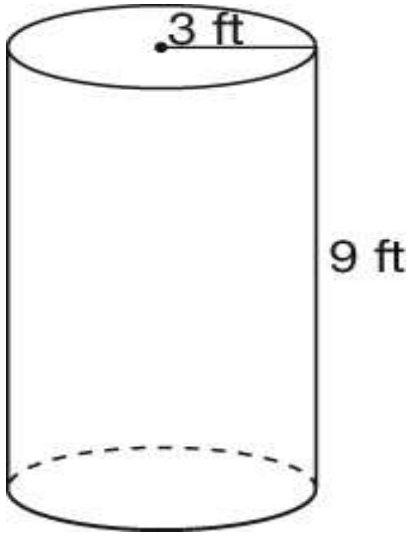
$S = 24 + 64$

$S = 88$



Volume and Surface Area
Module 13 (7^{th} Grade)

Find the surface area.



$S = 2B + 2\prod rh$

$B = \prod r^2$ $\quad\quad$ $2(3.14)(3)(9)$

$B = 3.14(3)^2$ $\quad\quad$ $=169.56$

$B = 28.26$

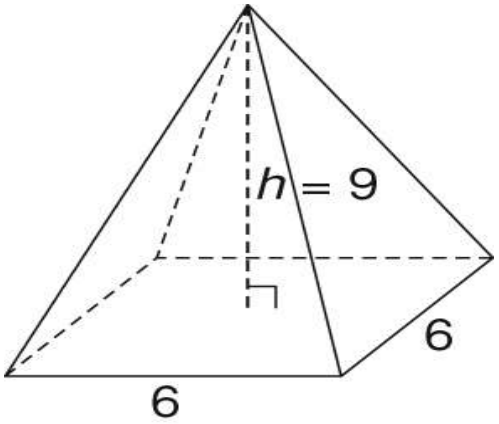
$S = 2(28.26) + 169.59$

$S = 226.08$

2nd Half

Volume
Module 7 (8th Grade)

1.Find the volume of the figure below.



V= 1/3Bh

B = lw h = 9

B=6(6)

B=36

V= 36(9) = 108

Volume
Module 7 (8th Grade)

2. Find the volume of a trianglular prism whose base area is 12 in^2 and height is 5 in.

V=Bh

B = 12 h = 5

V=12(5)=60

Volume
Module 7 (8^{th} Grade)

3. Find the volume of a sphere with radius 11 m to the nearest tenth. Use 3.14 for .

$V = 4/3 \prod r^3$

$V = 4/3(3.14)(11)^3$

$V = 4/3(3.14)(1331)$

$V = \frac{4(3.14)(1331)}{3}$

$V = \frac{16717.36}{3}$

$V = 5572.5$

Volume
Module 7 (8th Grade)

4. Find the volume and surface area of a sphere with a radius of 2 cm to the nearest tenth. Use 3.14 for

$V = 4/3 \prod r^3$

$V = \frac{4(3.14)(2)^3}{3}$

$V = \frac{200.96}{3}$

$V = 67$

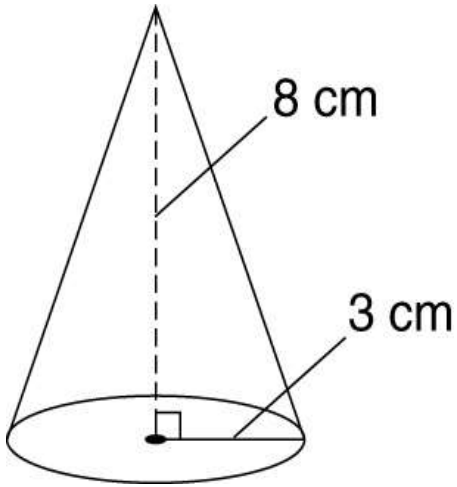
$S = 4 \prod r^2$

$S = 4(3.14)(2)^2$

$S = 50.24$

Volume
Module 7 (8th Grade)

5. Find the volume.



V = 1/3Bh

B = ∏r2

B = 3.14(3)2

B = 28.26

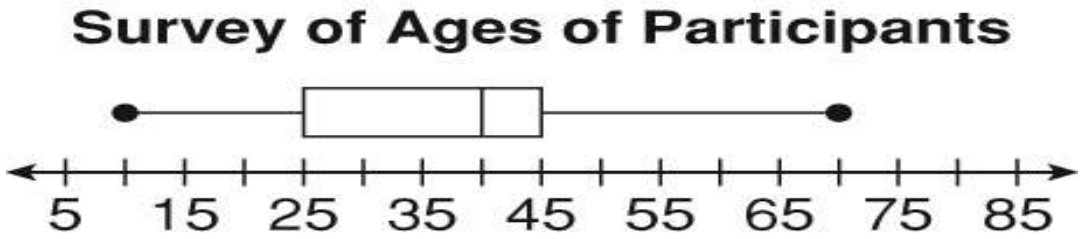
h = 8

V = 1/3(28.26)(8)

$V = \frac{226.08}{3}$

V = 75.36

Inferences B&W
Module 10 (7th Grade)



1.What is the range of ages in years for the participants?

70 – 10 = 60

2. Twenty-five percent of the participants was younger than what age?

25

Inferences B&W
Module 10 (7th Grade)

3. Use this data:
15, 8, 11, 5, 12, 10, 9

- Find the 5 number summary.

5 8 9 10 11 12 15

LE = 5

UE = 15

LQ = 8

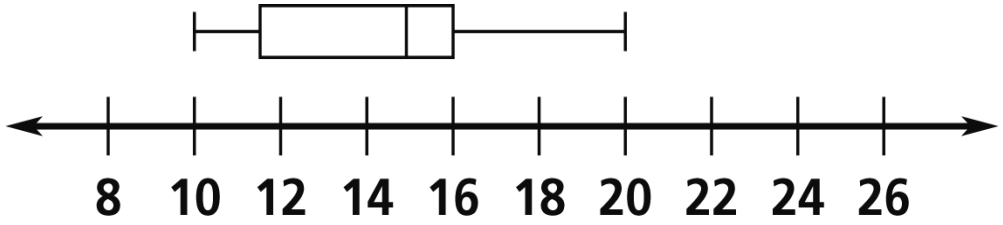
UQ = 12

Median = 10

Inferences B&W
Module 10 (7th Grade)

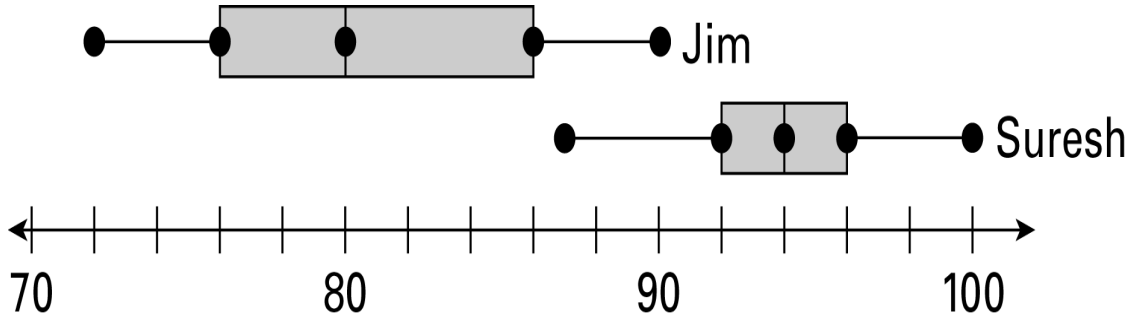
4. The box-and-whisker plot was made incorrectly from the data set. State the two errors in the plot.

17, 13, 10, 15, 16, 12, 13, 20, 18



LQ should be 12.5 and UQ should be 17.5

Inferences B&W
Module 10 (7th Grade)



5.Which B&W plot is more predictable?

Suresh b/c the range and IQR are smaller.

6. Which one has the highest median?

Suresh

Inferences MAD

Module 10 (7th Grade)

Use the data to answer the following.

- Sample A. 1,6,2,4,4,3,5,5,2,8
- Sample B. 3,4,5,4,3,2,4,5,4,4
- Find the Mean for Sample A.

Add all data then divide by number of data values.

1+6+2+4+4+3+5+5+2+8 = 40

40/10=4

- Find the MAD for Sample A

Find the difference of each data value and the mean.

Add the differences, then divide by number of data values.

3+2+2+0+0+1+1+1+2+4 = 16

16/10 = 1.6

Inferences MAD

Module 10 (7th Grade)

Use the data to answer the following.

- Sample A. 1,6,2,4,4,3,5,5,2,8
- Sample B. 3,4,5,4,3,2,4,5,4,4
- Find the Mean for Sample B.

Add all data then divide by number of data values.

3+4+5+4+3+2+4+5+4+4 = 38

38/10 = 3.8

- Find the MAD for Sample B.

Find the difference of each data value and the mean.

Add the differences, then divide by number of data values.

0.8+0.2+1.2+0.2+0.8+1.8+0.2+1.2+0.2+0.2 = 6.8

6.8/10 = 0.68

Inferences MAD
Module 10 (7th Grade)

Use the data to answer the following.

- Sample A. Mean = 4 MAD = 1.6
- Sample B. Mean = 3.8 MAD = 0.68

5. Which sample would you say is more consistent? Why?

Sample B. The MAD is smaller meaning the data values are clustered more closely around the mean and less spread out.

Inferences Pop&Samp

Module 10 (7th Grade)

Tell whether each sample may be biased. Name the type of sample.

1. A town official surveys 50 people in a library to decide if town residents want the library expanded.

   Biased, not all town people had a chance to respond.

   Convince Sample

2. A cable TV company randomly calls 200 customers and asks them if they are satisfied with their service.

   Not Biased; Simple Random Sample

Inferences Pop&Samp

Module 10 (7th Grade)

Tell whether each sample may be biased. Name the type of sample.

3. A landlord e-mails 60 of his 1,250 tenants and surveys them to determine whether they would like to use the Internet to pay rent.

Biased, not everyone has email or internet.

Voluntary Response

4. An insurance company surveys 350 of its customers by randomly choosing names from its customer database and then telephoning the customers.

Not Biased; Simple Random Sample

Inferences Pop&Samp

Module 10 (7th Grade)

Tell whether you would survey the entire population or a sample.

5. You want to know how many hours members of a sports team train each week during the off-season.

   Population

6. You want to know the average income of people who eat at vegetarian restaurants across the country.

   Sample

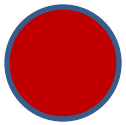
Inferences Pop&Samp

Module 10 (7th Grade)

Choose the letter of the sampling method that will better represent the whole population.

1. Clinton School Cafeteria: Student Satisfaction

   a. Mark surveys 40 students who are in his classes. 72% are satisfied with the food in the cafeteria.

   Tammy surveys 65 students by randomly choosing names from a list of all students in the school. 85% are satisfied with the food in the cafeteria.

Inferences Pop&Samp
Module 10 (7th Grade)

Choose the letter of the sampling method that will better represent the whole population.

2. Predicted Winner in an Election for Mayor

a. Harris telephones 100 randomly chosen voters. 54% plan to vote for Mayor Green.

b. Julia asks 70 people whom she knows. 45% plan to vote for Mayor Green.

Inferences Pop&Samp

Module 10 (7th Grade)

1. A high school has 1,800 students. A random sample of 80 shows that 24 have cell phones. Predict the number of students in high school who have cell phones.

$\frac{24}{80} = \frac{x}{1800}$ Set up proportion

80x = 43200 Cross Multiply

x = 540 Divide by 80 both sides

Inferences Pop&Samp

Module 10 (7th Grade)

2. A factory produces 500,000 nails per day. The manager of the factory estimates that there are less than 2,500 misshapen nails made per day. A random survey of 500 nails finds 4 misshapen ones. Is the manager correct in his estimate? Explain.

$\frac{4}{500} = \frac{x}{500{,}000}$ Set up proportion

500x = 2,000,000 Cross Multiply

x = 4,000 Divide 500 both sides

Explain: No, he was not correct. Around 4,000 nails should be misshapen according to the survey.

Inferences Pop&Samp

Module 10 (7th Grade)

Define:

1. Biased sample: A sample that does not fairly represent the population.
2. Population: The entire group of objects or individuals considered for a survey.
3. Random Sample: A sample in which each individual or object in the entire population has an equal chance of being selected.
4. Sample: A part of a population
5. Census: the procedure of systematically acquiring and recording information about the members of a given population.
6. Parameter: A distinguishing characteristic or feature