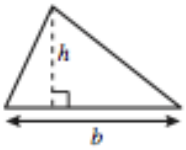
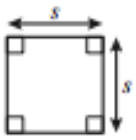
Math 8
SOL Review
2011-2012

Grade 8 Mathematics Formula Sheet
2009 *Mathematics Standards of Learning*

Geometric Formulas

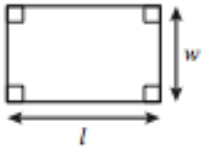


$A = \frac{1}{2}bh$



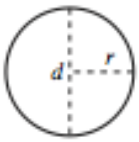
$p = 4s$

$A = s^2$



$p = 2l + 2w$

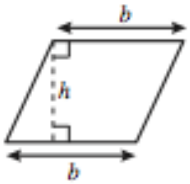
$A = lw$



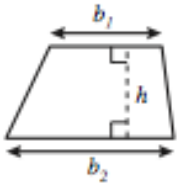
$C = 2\pi r$

$C = \pi d$

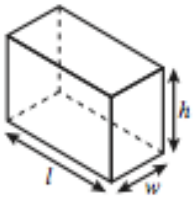
$A = \pi r^2$



$A = bh$

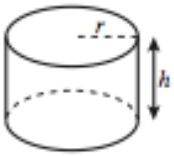


$A = \frac{1}{2}h(b_1 + b_2)$



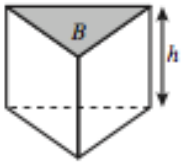
$V = lwh$

$S.A. = 2lw + 2lh + 2wh$



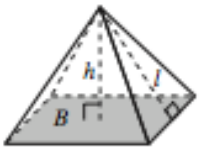
$V = \pi r^2 h$

$S.A. = 2\pi r^2 + 2\pi rh$



$V = Bh$

$S.A. = hp + 2B$

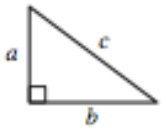


$V = \frac{1}{3}Bh$

$S.A. = \frac{1}{2}lp + B$

$V = \frac{1}{3}\pi r^2 h$

$S.A. = \pi r^2 + \pi rl$



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

Abbreviations

milligram	mg
gram	g
kilogram	kg
milliliter	mL
liter	L
kiloliter	kL
millimeter	mm
centimeter	cm
meter	m
kilometer	km
square centimeter	cm^2
cubic centimeter	cm^3

ounce	oz
pound	lb
quart	qt
gallon	gal.
inch	in.
foot	ft
yard	yd
mile	mi.
square inch	sq in.
square foot	sq ft
cubic inch	cu in.
cubic foot	cu ft

Area	A
Area of Base	B
Circumference	C
Perimeter	p
Surface Area	$S.A.$
Volume	V

Pi

$\pi \approx 3.14$

$\pi \approx \frac{22}{7}$

SOL 8.1

The student will

a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers; and

b) compare and order decimals, fractions, percents, and numbers written in scientific notation.

HINTS & NOTES

To write a number in scientific notation, you write the number as two factors.
-Move the decimal to the left or right to make a factor between 1 and 10.
-The exponent will be the number of places that you moved the decimal.
Example: 25,000,000 = 2.5×10^7
Example: .000345 = 3.4×10^4

To write a number in standard form, you move the decimal point to the left or right as many places as the exponent indicates. Put 0 in any space.
Example: 3.4×10^5 = 340,000
Example: 5.8×10^{-3} = .0058

Steps for ordering numbers:
1. Change all of the numbers to decimals.
2. Remember to look for the order that the questions asks. (L →G or G→L)

To change a fraction to a decimal → divide the numerator (top number) by the denominator (bottom number).

Example: $\frac{3}{8}$ =.375

To change a percent to a decimal □ move the decimal two places to the left

Example: 78% = 0.78

PRACTICE

1. 5.78×10^{-5} =

A. 57,800,000
B. 578, 000
C. 0.0000578
D. 0.00000578

2. What is 102,000,000 expressed in scientific notation?

F. 1.02×10^9
G. 1.02×10^8
H. 1.02×10^7
J. 1.02×10^6

3. Which statement is true?

A. $0.09 > \frac{7}{8}$
B. 6% < 0.09
C. $\frac{7}{8} < 8.0 \times 10^{-3}$
D. $8.0 \times 10^{-3} > 6\%$

4. Which list is ordered from least to greatest?

A. $\frac{1}{3}, \frac{3}{5}$, 30%, 3×10^{-2}
B. $\frac{3}{5}, \frac{1}{3}$, 30%, 3×10^{-2}
C. 3×10^{-2}, 30%, $\frac{1}{3}, \frac{3}{5}$
D. $\frac{1}{3}$, 30%, 3×10^{-2}, $\frac{3}{5}$

HINTS & NOTES

How to simplify numeric expressions:

GEMDAS

Step 1: Perform operations with grouping symbols (parenthesis and brackets).

Step 2: Simplify exponents.

Step 3: Perform all multiplication and division (in order from left to right)

Step 4: Perform all addition and subtraction (in order from left to right).

5. According to the order of operations, which operation should be performed first to simplify the expression?

$$12 + 2 \cdot 5^2 - 1$$

A. 12 + 2
B. 5 – 1
C. $2 \cdot 5^2$
D. 5^2

6. Which value is equivalent to $\frac{22 - 2^3}{\sqrt{64} - 3^0}$ **?**

F. 2
G. 14
H. 16
J. 30

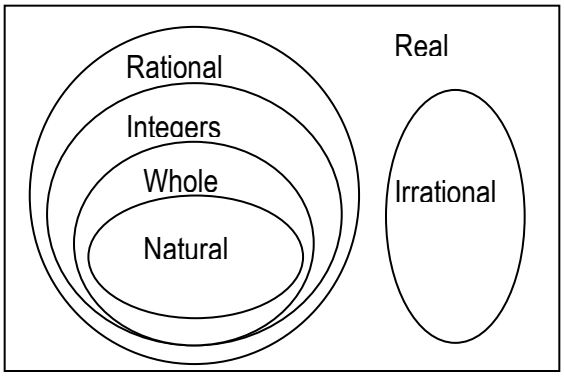
7. What is the value of $(4 - 2)^2 + 4 - 1$?

A. 7
B. 9
C. 15
D. 17

SOL 8.2

The student will describe orally and in writing the relationship between the subsets of the real number system.

Hints & Notes

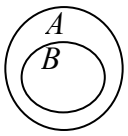


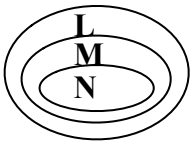
Real Number System

Natural: "counting numbers" 1, 2, 3, etc.
Whole: Natural + 0 0, 1, 2, 3, 4 etc.
Integers: Whole #s and their opposites
-2, -1, 0, 1, 2
Rational: Can be written as a ratio. Decimals end or repeat.
½, 1/3, ¼, 5, -2, 0
Irrational: Decimals that never end and never repeat such as $\sqrt{13}$, π

Subset – smaller or more specific group within a set.
Contained in – EVERYTHING is a subset of the bigger group

Examples
B is a **subset** of A.
N is completely contained in M





Practice

1. Which of the following does not contain the number 24?

A. Integers
B. Whole Numbers
C. Natural Numbers
D. Irrational Numbers

2. Which of the following is not a rational number?

F. -0.75
G. 0
H. $\sqrt{16}$
J. $\sqrt{13}$

3. What subset of the real number system is completely contained in the Whole Numbers?

A. Natural
B. Integer
C. Rational
D. Irrational

4. The set of whole numbers is not a subset of -

F. irrational numbers
G. integers
H. rational numbers
J. real numbers

SOL 8.3

The student will

a) solve practical problems involving rational numbers, percents, ratios, and proportions; and

b) determine the percent increase or decrease for a given situation.

Hints & Notes

How to change a percent to a decimal: Move the decimal place two places to the left.
Ex: 5.5% is 0.055 or 1% is 0.01

Tax: Find the % tax in $ by MULTIPLYING the $ times the % as a decimal. ADD to original amount

Tip: Find the % tip in $ by MULTIPLYING the $ times the % as a decimal. ADD to original amount

Sales/Discount: Find the % in $ by MULTIPLYING the $ times the % as a decimal. SUBTRACT from the original amount

Interest: I = *prt,* where *p* is the _____ amount ($), *r* is the _____ (%), and *t* is the _____ (years).

Checkbook Vocabulary:
Credit/Deposit = _____
Debit/Withdraw = _____

Set up a **proportion** with two equal fractions with similar information, cross multiply and divide to solve the equation.

Percent Increase/Decrease (change):

$$\frac{\text{new value - old value}}{\text{old value}} \times 100$$

(If the new value is smaller than the old value, take the absolute value of the difference)

Practice

1. Albert had a goal of saving $80. He saved 115% of his goal. How much money did Albert save?

   A. $70
   B. $92
   C. $115
   D. $195.

2. A Playstation game was originally priced at $59.99. It was marked down 15%. Then it was moved to a clearance rack marked "Take an additional 50% off the lowest marked price." What is the final price of the Playstation game?

   F. $25.50
   G. $30.00
   H. $50.99
   J. $59.99

Rob had $363.75 in his bank account on June 12. He made one deposit and two withdrawals as shown.

Rob's Bank Account

Date	Withdrawal	Deposit	Balance
June 12			$363.75
June 13	$47.50		
June 14		$91.25	
June 15	$54.75		

What was the balance in Rob's bank account after the withdrawal on June 15 ?

F $170.25
G $352.75
H $374.75
J $557.25

4. Betty had a score of an 80 on her first quiz and a score of an 88 on her second quiz. What is

   [ ] %

SOL 8.4

The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables.

Hints & Notes

Substitution:
Replace the variable with the appropriate given value. Follow the order of operations.

"GEMDAS":
Step 1: Perform operations with grouping symbols (parentheses and brackets)

Step 2: Simplify exponents.

Step 3: Perform all multiplication and division (in order from left to right).

Step 4: Perform all addition and subtraction (in order from left to right).

Practice

1. **What is the value of $3(x^2 - 4x)$ when x =5?**
   - **A.** 5
   - **B.** 15
   - **C.** 30
   - **D.** 55

2. **What is the value of the expression 5(a + b) - 3(b + c) if a=4,b=3,and c=2?**
   - **A.** 20
   - **B.** 18
   - **C.** 14
   - **D.** 10

3. **What is the value of the following when b = 2?**

$$\frac{3^b + 3(b - 4)}{b^2 - b}$$

4. **What is the value of $2(5-a)^2+7a$ when $a=2$?**
   - **A** 16
   - **B** 20
   - **C** 32
   - **D** 50

5. **What is the value of x^3+x^2+x when $x=3$?**
   - **A** 9
   - **B** 18
   - **C** 21
   - **D** 39

SOL 8.5

The student will

a) determine whether a given number is a perfect square; and

b) find the two consecutive whole numbers between which a square root lies.

Hints & Notes:

Perfect Square: is the product of an integer and itself.

Ex.: 5^2 = ☐ 10^2 = ☐

15^2 = ☐ 2^2 = ☐

Square Root: is the base which when multiplied by itself is equal to the original number.

Ex: $\sqrt{64}$ = ☐ $\sqrt{81}$ = ☐

$\sqrt{400}$ = ☐ $\sqrt{1}$ = ☐

Estimating Square Roots:

Identify the two consecutive whole numbers between which square root of a given whole number lies.

Ex. $\sqrt{21}$

1. Determine the two perfect squares that 21 falls between.

2. Take the square root of the two perfect squares

3. Answer.

Example

$\sqrt{21}$

1. 16 25
2. $\sqrt{16}$ $\sqrt{25}$
3. 4 & 5

Practice

1. Which of the following numbers is a perfect square?

A. 36
B. 28
C. 22
D. 14

2. Between which two whole numbers is $\sqrt{33}$?

A. 32 and 34
B. 16 and 17
C. 6 and 7
D. 5 and 6

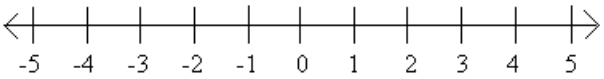
3. Which number is a perfect square?

A. 2
B. 5
C. 25
D. 52

4. Which has a value between 2 and 3?

A. $\sqrt{21}$
B. $\sqrt{8}$
C. $\sqrt{3}$
D. $\sqrt{2}$

5. Place the $\sqrt{23}$ where it belongs on a number line.



SOL 8.6

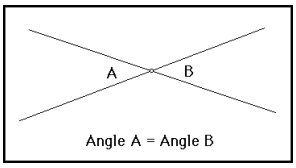
The student will

a) verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles; and

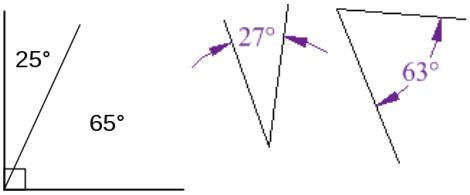
b) measure angles of less than 360°.

Hints and Notes

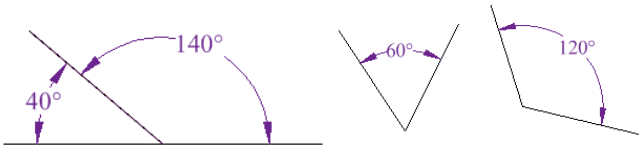
Vertical angles: Angles directly opposite that are congruent.



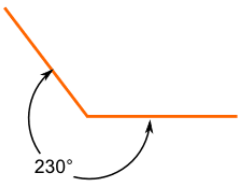
Complementary angles:
Two Angles are Complementary if they add up to _____ degrees (a Right Angle). **C**omplementary think **C**orner.



Supplementary angles:
Two angles are Supplementary if they add up to _____ degrees (straight line). **S**upplementary think **S**traight Line.



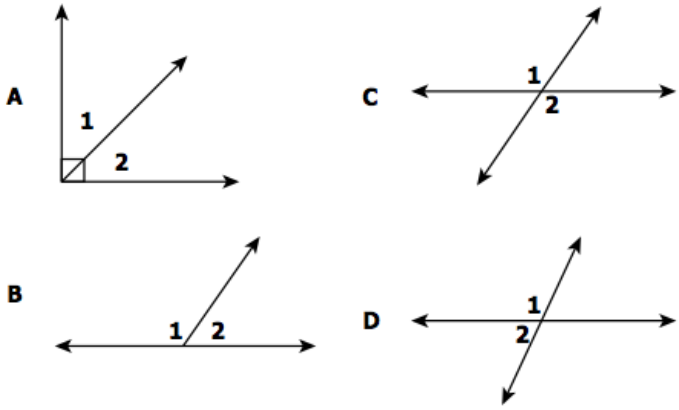
Reflex angles measure between 180 and 360 degrees.



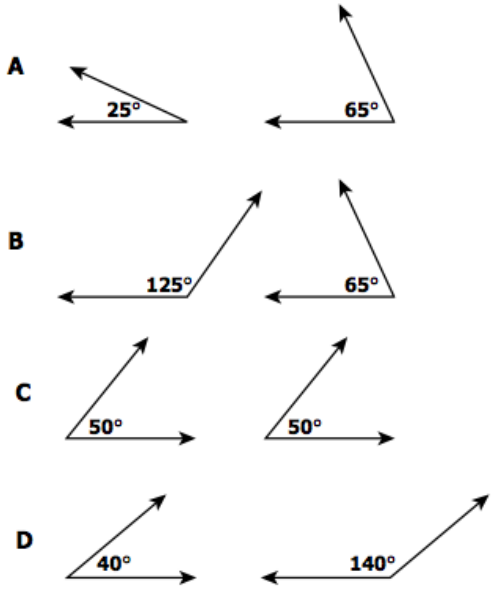
Adjacent angles are any two non-overlapping angles that share a common side and a common vertex.

Practice

1. In which diagram do ∠1 and ∠2 appear to be vertical angles?



2. Which pair of angles is supplementary?



SOL 8.7

The student will

a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and

b) describe how changing one measured attribute of a figure affects the volume and surface area.

Volume is the number of unit cubes, or cubic units, needed to fill a solid figure. (filling a box)

Surface Area is the sum of the areas of its surfaces. (wrapping a box)

VOLUME:

Rec. Prism: $V = lwh$

Tri. Prism: $V = Bh$

Cylinder: $V = \pi r^2 h$

Cone: $V = \frac{1}{3}\pi r^2 h$

Pyramid: $V = \frac{1}{3}Bh$

SURFACE AREA:

Rec. Prism: $SA = 2lw + 2lh + 2wh$

Tri. Prism: $SA = hp + 2B$

Cylinder: $SA = 2\pi rh + 2\pi r^2$

Cone: $SA = \pi rl + \pi r^2$

Pyramid: $SA = \frac{1}{2}l\,p + B$

Where:

V = volume

SA = surface area

B = area of the base

l = length

w = width

h = height

r = radius

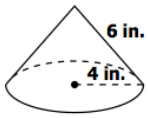
p = perimeter of the base

Practice

1. What is the volume of a square-based pyramid with base side lengths of 16 meters, a slant height of 17 meters, and a height of 15 meters?

   A. 1280 m^3
   B. 1360 m^3
   C. 1450 m^3
   D. 2040 m^3

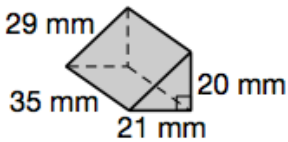
2. **The radius of the base of a cone is 4 inches. The slant height of the cone is 6 inches. Which is closest to the surface area of the cone?**



   F 75 sq in.
   G 100 sq in.
   H 126 sq in.
   J 188 sq in.

3. The volume of a square-based pyramid is 588 cubic inches. The height of this pyramid is 9 inches. What is the area of the base of this pyramid?

4. What is the total surface area of this prism?



5. If a rectangular prism has a length of 3 ft,a width of 4 ft,and a height of 5 ft and you double the width, what will happen to the volume and surface area?

SOL 8.8

The student will

a) apply transformations to plane figures; and

b) identify applications of transformations.

Hints & Notes

A **transformation** is a change in the position, shape, or size of a figure.

- The original figure you start with is called a **pre-image**.
- The figure you end with is called the **image**.

We discussed **4** transformations:

- **Rotations** are transformations that turn a figure about a fixed point called the **center of rotation**. The **angle of rotation** is the number of degrees the figure rotates.
  - **Graphing Rotations:**

  Step 1: Draw and trace.

  Step 2: Rotate and mark each vertex.

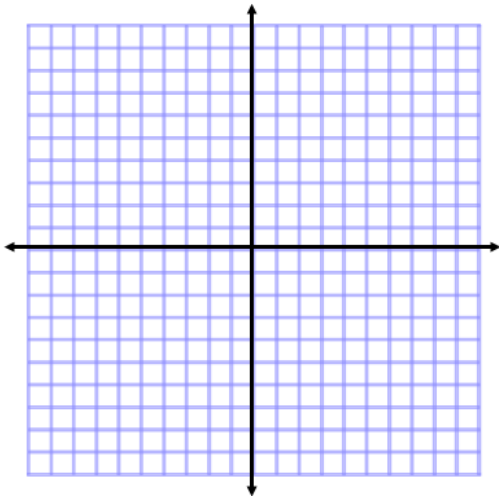
  Step 3: Complete the new figure.

- **Reflections** are transformations that flip a figure over a line. This line is called the **line of reflection.**
  - **Graphing Reflections:**

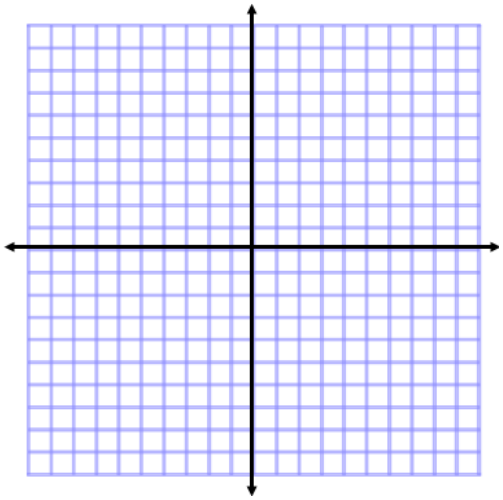
  Step 1: Draw your figure.
  Step 2: Identify the line of reflection and fold your paper on it.
  Step 3: Mark each vertex and complete the new figure.

Practice

1. The vertices of ΔXYZ are $X(3, 5)$, $Y(4, 2)$, and $Z(0, 2)$. Rotate the figure 90° clockwise about the origin.



2. Reflect the figure over the x-axis.



SOL 8.8

The student will

a) apply transformations to plane figures; and

b) identify applications of transformations.

Hints and Notes

- **Translations** are transformations that move each point of a figure the same distance in the same direction.
  - **Graphing Translations**

Step 1: Identify the translation.
Step 2: Move each point of the figure the same distance in the same direction.
Step 3: Complete the figure.

- **Dilations** are transformations that create similar figures of larger or smaller sizes. The ratio of the pre-image and the image is called the **scale factor**.

A dilation with a scale factor greater than 1 is called an **enlargement**.

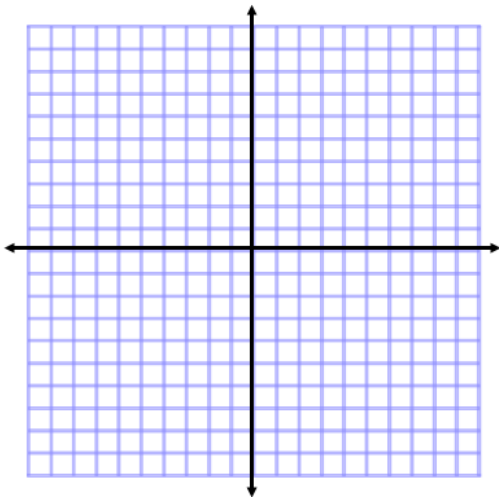
A dilation with a scale factor less than 1 is called a **reduction**.

Graphing Dilations

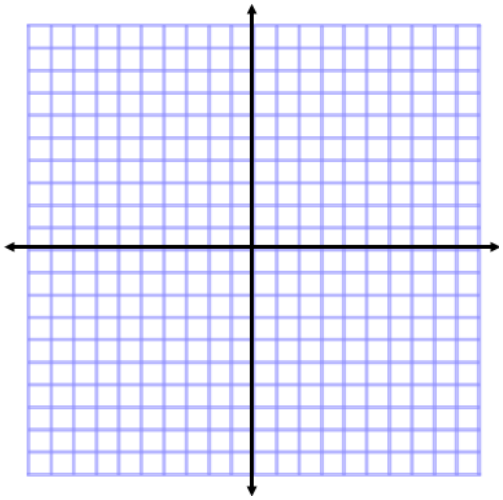
Step 1: Multiply the x- and y-coordinates of each point by the same scale factor.
Step 2: Graph the image.

Practice

3. Slide the figure two units to the right and 6 units down.



4. Draw the image of the figure after a scale factor of 2.



SOL 8.9

The student will construct a three-dimensional model, given the top or bottom, side, and front views.

Hints and Notes

Dimensional Figures

1-D: Length
2-D: Length and width
3-D: Length, width and depth

Parts of a Cube

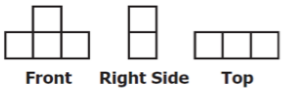
A: Vertex – Corner where three sides meet.
B: Face – Flat part of a cube.
C: Edge – Part where two faces meet.

3-D Views:

Front – Part that faces you.
Top – Looking down on the object (bird's eye view)
Side – Tilted part (profile view)
Bottom – Opposite of top. Looking up at the object.

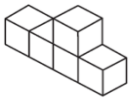
Practice

1. **Three different views of a three-dimensional figure constructed from cubes are shown.**



Which figure could be represented by these views?

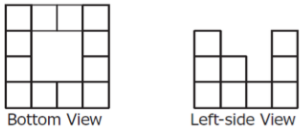
A

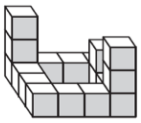
B 

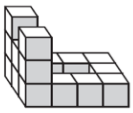
C

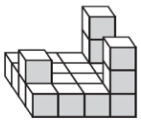
D

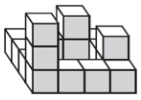
2. **A figure has the bottom and left-side views shown, and its front view is shaded. Which represents the figure?**



F 

G 

H 

J 

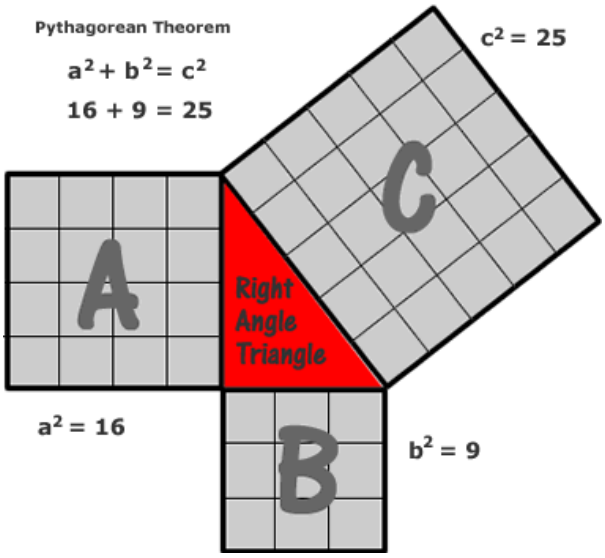
SOL 8.10

The student will
a) verify the Pythagorean Theorem; and
b) apply the Pythagorean Theorem.

Hints & Notes

Pythagorean Theorem:

$leg^2 + leg^2 = hypotenuse^2$



Can only be applied to ***right*** triangles.

The hypotenuse of right triangle is *always* opposite the right angle.

The longest side of a right triangle is always the hypotenuse.The legs of a right triangle are always adjacent (next to) the right angle.

3 numbers will form a right triangle if $a^2 + b^2 = c^2$ and c is the biggest number.

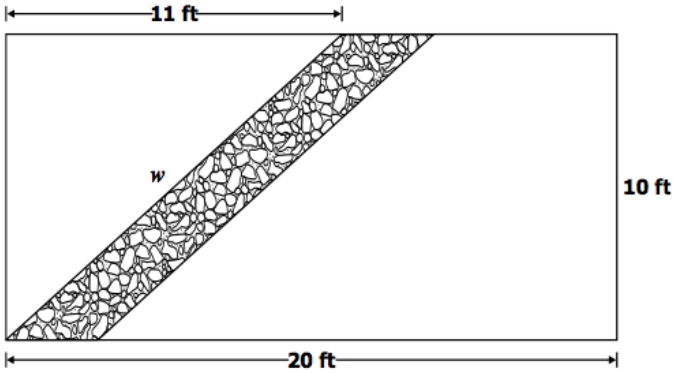
Practice

1. **Which group of three side lengths could form a right triangle?**

F 5 ft, 12 ft, 13 ft
G 7 ft, 11 ft, 14 ft
H 15 ft, 20 ft, 22 ft
J 18 ft, 34 ft, 39 ft

2.

Mr. Malone plans to construct a walkway through his rectangular garden, as shown in the drawing.

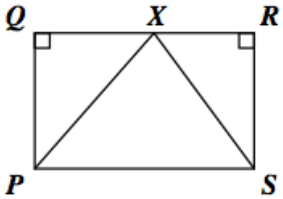


Which is closest to the value of *w* ?

F 22 ft
G 21 ft
H 15 ft
J 11 ft

3.

Three triangles are drawn in rectangle *PQRS*.



Which of the following segments is a hypotenuse of one of these

F $\overline{RS}$

G $\overline{RQ}$

H $\overline{XS}$

J $\overline{XQ}$

SOL 8.11

The student will solve practical area and perimeter problems involving composite plane figures.

Hints and Notes

A polygon is a simple, closed plane figure with sides that are line segments.

The perimeter of a polygon is the distance around the figure.

The area of any composite figure is based upon knowing how to find the area of the composite parts such as triangles and rectangles.

The area of a rectangle is computed by multiplying the lengths of two adjacent sides ($A = lw$).

The area of a triangle is computed by multiplying the measure of its base by the measure of its height and dividing the product by 2 ($A = \frac{1}{2}bh$).

The area of a parallelogram is computed by multiplying the measure of its base by the measure of its height ($A = bh$).

The area of a trapezoid is computed by taking the average of the measures of the two bases and multiplying this average by the height [$A = \frac{1}{2}h(b_1 + b_2)$].

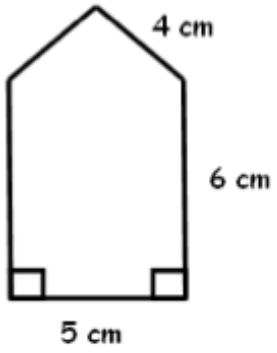
The area of a circle is computed by multiplying Pi times the radius squared ($A = \pi r^2$).

The circumference of a circle is found by multiplying Pi by the diameter or multiplying Pi by 2 times the radius ($C = \pi d$ or $C = 2\pi r$).

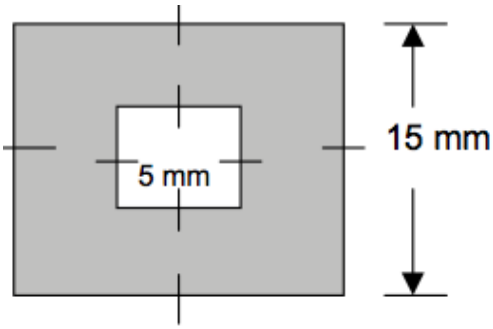
An estimate of the area of a composite figure can be made by subdividing the polygon into triangles, rectangles, squares, trapezoids and semicircles, estimating their areas, and adding the areas together.

Practice

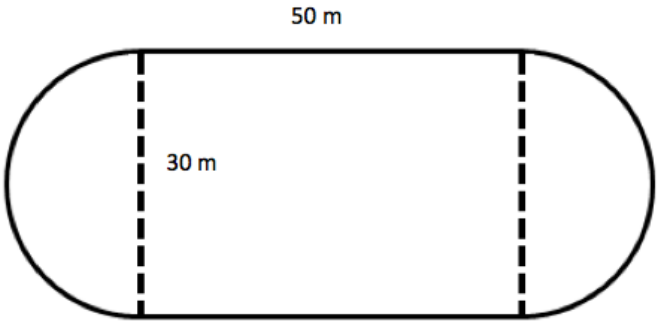
1. Calculate the area and perimeter of the following shape.



2. Find the area of the shaded region.



3. Spotsylvania County has to pay for maintenance on the football field. They need to replant sod, which costs $13.50/meter squared. How much will it cost to sod the field?



SOL 8.12

The student will determine the probability of independent and dependent events with and without replacement.

Hints & Notes

Two events are either dependent or independent.

If the outcome of one event does not influence the occurrence of the other event, they are called independent. If events are independent, then the second event occurs regardless of whether or not the first occurs. For example, the first roll of a number cube does not influence the second roll of the number cube. Other examples of independent events are, but not limited to: flipping two coins; spinning a spinner and rolling a number cube; flipping a coin and selecting a card; and choosing a card from a deck, replacing the card and selecting again.

The probability of three independent events is found by using the following formula:

$$P(A \text{ and } B \text{ and } C) = P(A) \cdot P(B) \cdot P(C)$$

Ex: When rolling three number cubes simultaneously, what is the probability of rolling a 3 on one cube, a 4 on one cube, and a 5 on the third?

Dependent Events-the first event DOES affect the outcome of the second event

In a bag of marbles there are 4 green, 3 red, and 2 blue. You choose a marble, do NOT replace it then choose a second marble. What is P(green then red)?

Practice

1. In an experiment, you are asked to roll a die and flip a coin. What type of event is this?

2. There are 8 brownies and 4 cookies. Each student may have 1 dessert. You choose one, then the next person picks one. What type of event is this?

3. In a bag there are 4 blue marbles, 1 white marble, and 3 red marbles. You choose a red marble and keep it. What is the probability that the next person will choose another red marble?

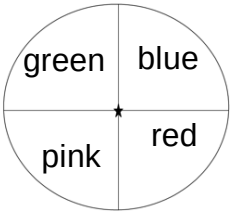
   A. 3/8

   B. 5/16

   C. 3/32

   D. 3/28

4. If I roll a die, spin a spinner and flip a coin. Find P(3, green, tails).



SOL 8.13

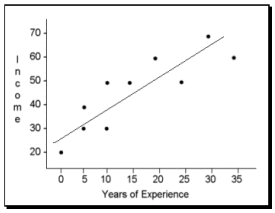
The student will

a) make comparisons, predictions, and inferences, using information displayed in graphs; and
b) construct and analyze scatterplots.

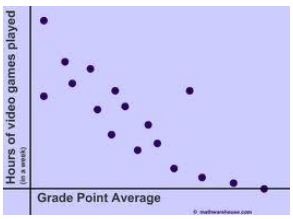
Hints and Notes

Scatterplots: Two related sets of data are graphed as points to display correlations

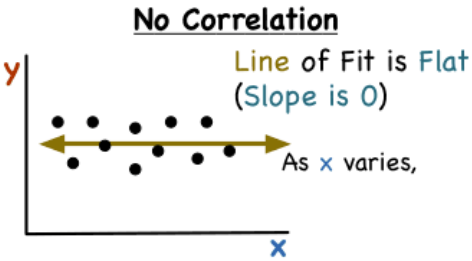
Positive Trend



Negative Trend



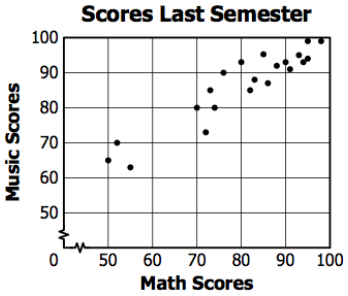
No Trend



Practice

1.

The following scatterplot shows the scores several students received in math and music classes last semester.

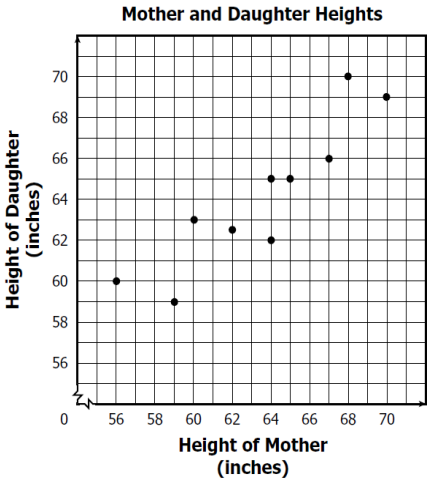


Which statement best describes the relationship in the scatterplot?

F As the math score decreases, the music score increases.
G As the math score increases, the music score decreases.
H As the math score decreases, the music score does not change.
J As the math score increases, the music score increases.

2.

This scatterplot shows the relationships between the heights of 10 pairs of mothers and daughters.



Based on the scatterplot, which of the following statements is true?

F The tallest mother has the tallest daughter.
G The shortest mother has the shortest daughter.
H Taller mothers tend to have taller daughters.
J Shorter mothers tend to have taller daughters.

SOL 8.14

The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.

Hints and Notes

Remember the **Rule of 5.** You can represent relationships in several ways.

1. manipulatives
2. pictures
3. tables
4. graphs
5. rules

Remember when you are graphing ordered pairs, you move left or right on the x-axis first, then up or down on the y-axis.

Test taking strategies:

1. If you have to match a table to an equation, plug in the x and y values until you make a match.

2. If you have to match a table to a graph, be sure to check all ordered pairs you are given.

3. If you have to match an equation to a graph, create a table of at least 3 x-values, plug them in to get the y-values, then match your ordered pairs to the correct graph.

4. If you have to match a graph to an equation, make a list of the ordered pairs from each graph then plug them into the equation until you find a match.

Practice

1.

Margaret has $200 in her savings account. She will deposit $50 into this account each week and will make no withdrawals. Which table represents this situation, excluding interest?

A

Savings

Week	Amount in Account
0	$200
1	$250
2	$300
3	$350

B

Savings

Week	Amount in Account
0	$50
1	$250
2	$450
3	$650

C

Savings

Week	Amount in Account
0	$200
1	$150
2	$100
3	$50

D

Savings

Week	Amount in Account
0	$50
1	$100
2	$150
3	$200

2.

Which of these equations represents the table of values?

x	y
−2	2
1	8
3	12
6	18

F $y = {}^{-}x$

G $y = x + 7$

H $y = 3x + 3$

J $y = 2x + 6$

3.

Which table contains only points that lie on the line of the equation $y = 6x - 6$?

F

x	y
0	−6
5	5

H

x	y
2	6
−2	−18

G

x	y
0	6
3	12

J

x	y
2	6
−1	0

SOL 8.15

The student will

a) solve multistep linear equations in one variable with the variable on one and two sides of the equation;
b) solve two-step linear inequalities and graph the results on a number line; and
c) identify properties of operations used to solve an equation.

Hints and Notes

Remember to solve equations or inequalities you MUST maintain **balance** (what you do to one side of the equation has to be done to the other side of the equation).

Don't forget to **FLIP the inequality sign if you multiply or divide by a negative when solving inequalities.**

Inverse Operations:
Addition and Subtraction
Multiplication and Division

Don't forget your integer operation rules. Use your calculator to check your work!

Test taking strategies:
If all else fails, PLUG And CHUG, substitute each answer choice into the equation until you find the one that works!

Properties
-Distributive Property

-Identity Properties

-Inverse Properties

Practice

1. **What is the solution to $\frac{n}{2} - 4 > 10$?**

   F $n > 7$
   G $n > 12$
   H $n > 24$
   J $n > 28$

2. **What value of n makes this equation true?**

   $$4n + 9 = 6$$

   A $^{-}7.50$
   B $^{-}0.75$
   C 3.75
   D 10.50

3. **Which of the following is equivalent to the inequality $5x + 7 < 17$?**

   A $5x < 10$
   B $5x > 10$
   C $5x < 24$
   D $5x > 24$

4. **What value of n makes the equation true?**

   $$\frac{2}{3}n + 4 = 10$$

   F $14\frac{2}{3}$
   G 9
   H $5\frac{1}{3}$
   J 4

5. **What is the value of x in the following equation?**

   $$^{-}4x + 2 = {}^{-}14$$

   A $^{-}4$
   B $^{-}3$
   C 3
   D 4

SOL 8.16

The student will graph a linear equation in two variables.

Hints and Notes

If given a table with coordinates to match with a graph, draw a graph on scratch paper and plot the points and then choose the graph that matches!

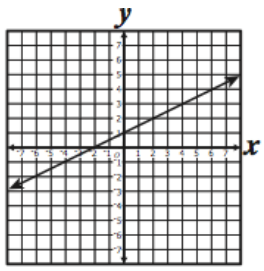
If given a graph and asked to choose a table that matches, write down all the points in the graph and then choose the table that matches!

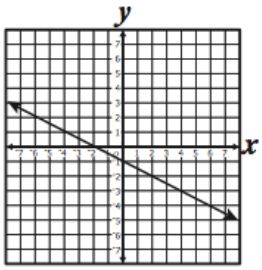
Practice

1. **Which graph contains the ordered pairs in the table?**

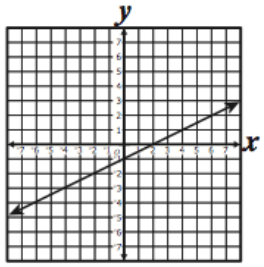
x	y
−2	0
0	−1
4	−3

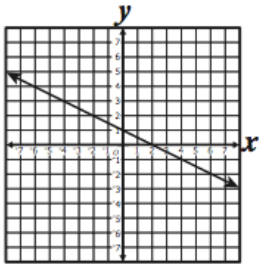
H





J



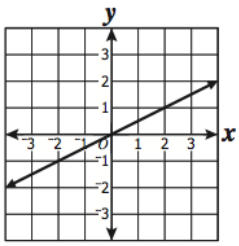


2.

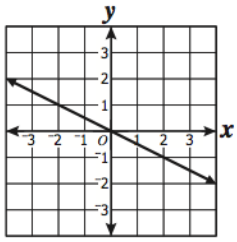
x	y
-2	-1
0	0
2	1

Which graph best represents the line defined by the table of ordered pairs?

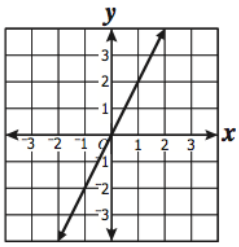
F



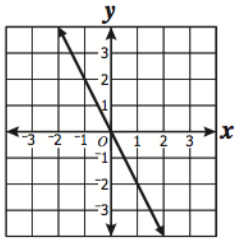
H



G



J



SOL 8.17

The student will identify the domain, range, independent variable, or dependent variable in a given situation.

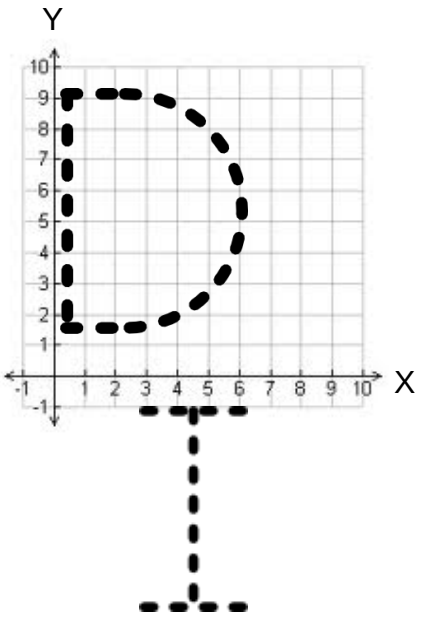
Hints and Notes

Domain: All the **VALUES** of X or the independent variable.

Range: All the **VALUES** of Y or the dependent variable.

Independent Variable: "I Change" What is changing. Usually associated with the "X axis."

Dependent Variable: This depends on the independent variable. Usually associated with the "Y axis."



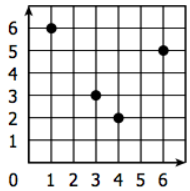
IV X	DV Y
1	2
2	5
3	8
4	11
5	14

Domain

Range

Practice

1. **A relation is graphed as shown.**



What is the domain of this relation?

A $\{1, 3, 4, 6\}$

B $\{2, 3, 5, 6\}$

C $\{1, 2, 3, 4, 5, 6\}$

D $\{0, 1, 2, 3, 4, 5, 6\}$

2. **Which number is *not* an element of the domain of the relation shown?**

$$\{(^{-}2, 4), (0, 4), (1, 2), (3, 2)\}$$

F $^{-}2$
G 0
H 1
J 4

3. **A function of x is defined by the following equation.**

$$y = 5x + 12$$

What is the independent variable?

A x
B y
C 5
D 12

4. **The values for a function of x are in the table.**

x	y
1	3.14
2	12.56
3	28.26
4	50.24

What is the range of the function?

A $\{1, 2, 3, 4\}$

B $\{3.14, 12.56, 28.26, 50.24\}$

C $\{(1, 3.14), (2, 12.56), (3, 28.26), (4, 50.24)\}$

D $\{1, 2, 3, 4, 3.14, 12.56, 28.26, 50.24\}$