

Name _____ Class _____

Midterm Exam --- Review Policy (Sign this paper and turn in to your instructor; keep the 2nd page)

I understand that this review will Count as **10%** of my grade for the 3rd six week grading period.

I understand that ALL problems must be done completely and all work shown. Any work not done in class will be done by me as homework.

I understand that this review must be turned in at the **BEGINNING** of my Midterm Exam to receive full credit. Any late review will receive a maximum of 70% on the review.

The review will not be accepted by Ms. Craft or Mrs. Snow after 1:10 Thursday December 20, 2012.

I further understand that if this review is not turned in at the beginning of my Midterm, and/or has not been completed to 70% accuracy and completion, I will not be eligible to retake the exam without attending two tutoring sessions and completely redoing the review to a passing grade; if I unfortunately do not pass the exam. I understand that there are no exceptions to this policy.

I certify that I have received the entire review which consists of 14 pages of work on white paper in addition to a copy of this page that includes "The Dance Card" (the order which I follow the stations).

Retakes, if allowed, will be scheduled on the first week of the spring term, after school on Wednesday or Thursday for those eligible students whose reviews were acceptable. Retakes for unacceptable reviews will be taken after attending two tutorials of one hour each minimum.

Review answers will be posted in my room on Friday Dec. 14 at 4:05 PM until Monday, Dec. 17, at 4:30 PM.

SHOW ALL WORK ROUND TO THE NEAREST 100THS PLACE UNLESS TOLD OTHERWISE!!!!!!!

Signature _____

Class Period _____

Printed Name _____

Date: _____

Midterm Exam --- Review Policy (Keep one attached to papers and hand one to the instructor)
I understand that this review will Count as **10%** of my grade for the 3rd six week grading period.
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I understand that this review must be turned in at the **BEGINNING** of my Midterm Exam to receive full credit. Any late review will receive a maximum of 70% on the review.
The review will not be accepted by Ms. Craft or Mrs. Snow after 1:15 Thursday December 20, 2012.
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Dance Card For: _____

Day One:

Day Two

Station _____

Station _____

Station _____

Station _____

Station _____

Station _____

Match these words to their definitions on the next page

- A. Addition
- B. Absolute
- C. Coefficient
- D. Constant
- E. Constant of Variation
- F. Correlation
- G. Domain
- H. Discrete
- I. Division
- J. Dilate
- K. Equation
- L. Elimination
- M. Even
- N. Equal
- O. Graph
- P. Infinite
- Q. Intercept
- R. Linear
- S. Lists
- T. Mean
- U. Mode
- V. Median
- W. None
- X. Origin
- Y. Home
- Z. Review
- AA. Reflect
- BB. Quadratic
- CC. Ratio
- DD. Santa
- EE. Rotate
- FF. Range (Central Tendency)
- GG. Range (Graphing)
- HH. STAT
- II. Scatter Plot
- JJ. Slope
- KK. Substitution
- LL. Trend line
- MM. Translate
- NN. Santa
- OO. The measure of Central Tendency you use to predict an outcome when the data contains an outlier
- PP. The measure of Central Tendency you use to predict an outcome when the data does not contain an outlier.
- QQ. The measure of Central Tendency you use to predict an outcome when popularity or frequency is in question.

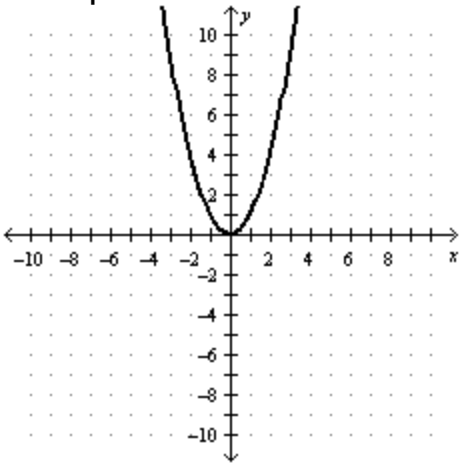
- ___ 1. Average
- ___ 2. A trend shown on a scatter plot
- ___ 3. The comparison of two numbers by division
- ___ 4. When doing a Linear regression, you make ___ of the x values and the y values in the STAT program
- ___ 5. When you change the “b” in $y = mx + b$, you ___ the graph up and down on the y axis.
- ___ 6. When you change the “m” in $y = mx + b$, you ___ the graph steeper or less steep
- ___ 7. Highest minus Lowest in measures of Central Tendency
- ___ 8. A graph where the points are not connected
- ___ 9. He makes lists and checks twice
- ___ 10. A number next to a variable in an mathematical expression
- ___ 11. Rate of Change
- ___ 12. An equation in the form of $y = mx + b$ is called a ___ equation.
- ___ 13. When you replace a variable with a number or an expression in an equation, it is called _____
- ___ 14. If you do not hand in your _____ with the midterm, you will not be allowed to take a retest.
- ___ 15. The point (0,0) on a graph
- ___ 16. X values
- ___ 17. $F(x) = |x|$ is the parent function of _____ values.
- ___ 18. Order does not matter in multiplication and _____
- ___ 19. A mathematical sentence with an = sign in it.
- ___ 20. $2x + 3 = 2x + 3$ has how many solutions? _____
- ___ 21. There is no place like _____ for the holidays

- ___ 22. Mean
- ___ 23. Mode
- ___ 24. A number that stands alone without a variable in a mathematical expression
- ___ 25. What happens to a linear graph ($y = mx + b$) when you put a negative sign in front of the “m”
- ___ 26. Median
- ___ 27. In a linear graph ($y = mx + b$) where the “b” touches the y axis is the y _____
- ___ 28. Line of Best Fit
- ___ 29. When solving a system of equations by making a set of variables opposites, the method is called _____
- ___ 30. Middle number in a set ___
- ___ 31. The key on the calculator to start a linear regression
- ___ 32. The most frequently used number in a set
- ___ 33. Where two graphs meet is often called the break _____ point
- ___ 34. “k” in $y = kx$ example $y = 3x$
- ___ 35. A graph that plots individual items of data
- ___ 36. An equation of the form $y = ax^2 + bx = c$
- ___ 37. A mathematical sentence is not an equation unless it has a _____ sign in it.
- ___ 38. A ratio that expands or contract an object in proportion
- ___ 39. Slope – Intercept Linear equation
- ___ 40. One way to solve a system of equations is to _____ them and see where they intersect.
- ___ 41. Y -values (graphing)
- ___ 42. How many solutions does the equation $2x + 3 = 2x + 2$ have?
- ___ 43. Order matters in subtraction and _____

Parent Function: Match the name of the parent function, and the equation to the correct graph

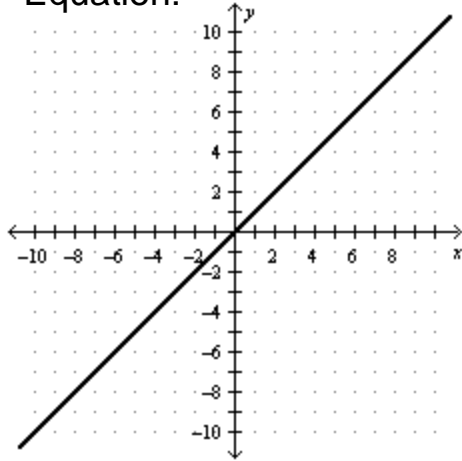
Function:

Equation:



Function:

Equation:

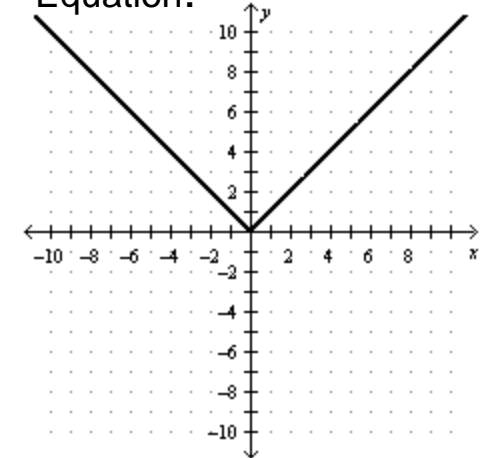


- A. Absolute Value Function
- B. Exponential Function
- C. Inverse Function
- D. Linear Function
- E. Quadratic Function
- F. Square Root Function

- J. $f(x) = x$
- K. $f(x) = x^2$
- L. $f(x) = |x|$
- M. $f(x) = x^a$
- N. $f(x) = \sqrt{x}$
- P. $f(x) = \frac{1}{x}$

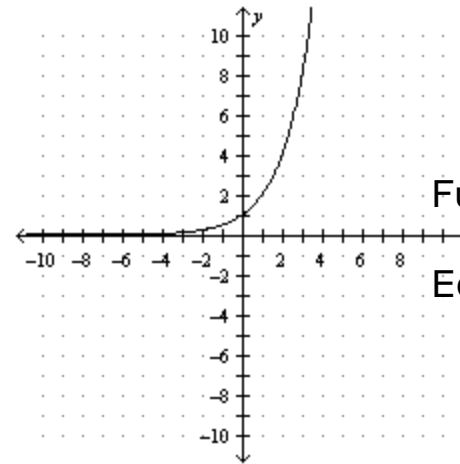
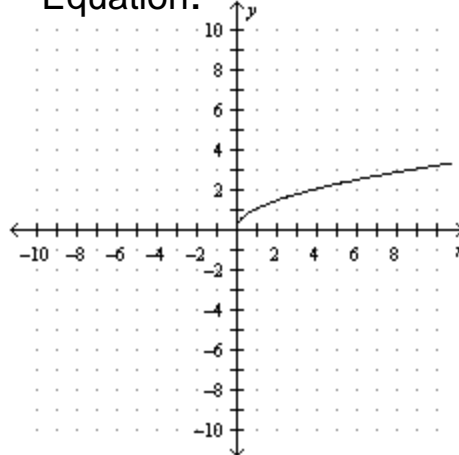
Function:

Equation:



Function:

Equation:

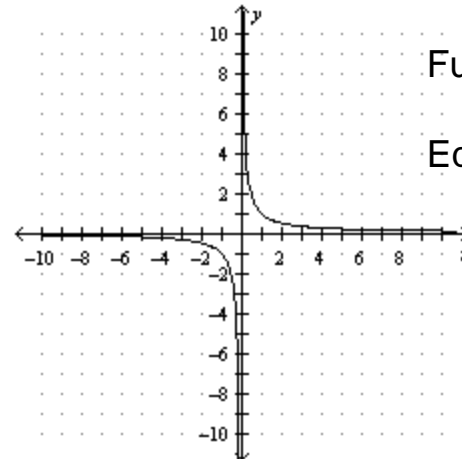


Function:

Equation:

Function:

Equation:



1. Susan took a survey of some of her friends to see how much time a week they spend studying.

The following are the results in hours:

7,6,9,10,0,8,7

Which is the best MCT to use to estimate the amount of hours other students in the school study per week?

- A. Mean
- B. Mode
- C. Median
- D. Range

2. Susan took a survey of some of her friends to see how much time a week they spend studying.

The following are the results in hours:

7,6,9,10,9,8,7

Which is the best MCT to use to estimate the amount of hours other students in the school study per week?

- A. Mean
- B. Mode
- C. Median
- D. Range

3. Walmart bases its predictions for future sales based on the sales for the 3rd week of March.

The following sales were from one store on the 3rd week of March in 2012:

23,000, 27,5000, 24,000, 26,000, 25,000,24,600, 28,000

Which is the best MCT to use to estimate the amount of sales that Walmart will have in the future weeks?

- A. Mean
- B. Median
- C. Mode
- D. Range

4. Walmart bases its predictions for future sales based on the sales for the 3rd week of November. The following sales were from one store on the 3rd week of November in 2012:

Which is the best MCT to use to estimate the amount of sales that Walmart will have in the future weeks?

- A. Mean
- B. Median
- C. Mode
- D. Range

5. Ms. Jones took a survey of her students favorite colors. Which Measure of central tendency should she use to determine the most popular favorite color in her class?

- A. Mean
- B. Median
- C. Mode
- D. Range

Solving Equations through Substitution and Elimination

Plan of attack. Isolate one equation to $y =$ or $x =$ and put it where the x or y is in the other equation. Solve and solve for the other variable. Check answers

$$\begin{cases} x = 6y - 11 \\ 3x - 2y = -1 \end{cases}$$

$$\begin{cases} x = -\frac{1}{4}y + 5 \\ 3x + 2y = 0 \end{cases}$$

$$\begin{cases} y = 4(2x - 3) \\ y = 3 + 8x - 11 \end{cases}$$

Plan of attack. Look for opposites. If you find them, add the equations and solve. Remember to also solve for the other variable. If there are not opposites, create them by multiplying one (or both) equations by a number to make opposites. Check answers

$$\begin{cases} -10x + y = 0 \\ 5x + 3y = -7 \end{cases}$$

$$\begin{cases} 4x - y = -5 \\ -2x + 3y = 10 \end{cases}$$

$$\begin{cases} 2x + 3y = 6 \\ 3x + 2y = 14 \end{cases}$$

Systems Word Problems Substitution

1. Fabulously Fit offers memberships for \$35 per month plus a \$50 enrollment fee. The Fitness Studio offers memberships for \$40 per month plus a \$35 enrollment fee. In how many months will the fitness clubs cost the same? What will the cost be?

Equation 1: _____

Equation 2: _____

Solve:

Check answer.

2. Kate bought 3 used CDs and 1 used DVD at the bookstore. Her friend Joel bought 2 used CDs and 2 used DVDs at the same store. If Kate spent \$20 and Joel spent \$22, determine the cost of a used CD and a used DVD.

Equation 1: _____

Equation 2: _____

Solve:

Check answer.

System Word Problems - Elimination

1. Mr. Nguyen bought a package of 3 chicken legs and a package of 7 chicken wings. Ms. Dawes bought a package of 3 chicken legs and a package of 6 chicken wings. Mr. Nguyen bought 45 ounces of chicken. Ms. Dawes bought 42 ounces of chicken. How much did each chicken leg and each chicken wing weigh?

Equation 1: _____

Equation 2: _____

Solve:

Check answer.

2. Last month Stephanie spent \$57 on 4 allergy shots and 1 office visit. This month she spent \$9 after 1 office visit and a refund for 2 allergy shots from her insurance company. How much does an office visit cost? an allergy shot?

Equation 1: _____

Equation 2: _____

Solve:

Check answer.

Round to the nearest 100th places!!!!!!!

- Graph the 5 points shown in the table of values below the graph.
- Draw a line of best fit using a straight edge. If it goes through (0,0) it is wrong.
- Should your slope be positive or negative? Circle which one, yes is not an answer.
- On the graph, mark two points on your line of best fit by putting a check mark above the points AND show the points here in coordinate point form:
(,) and (,)
- Using the slope formula, find the slope. Yes, you may use your formula chart. Show work

Slope in fraction form = _____

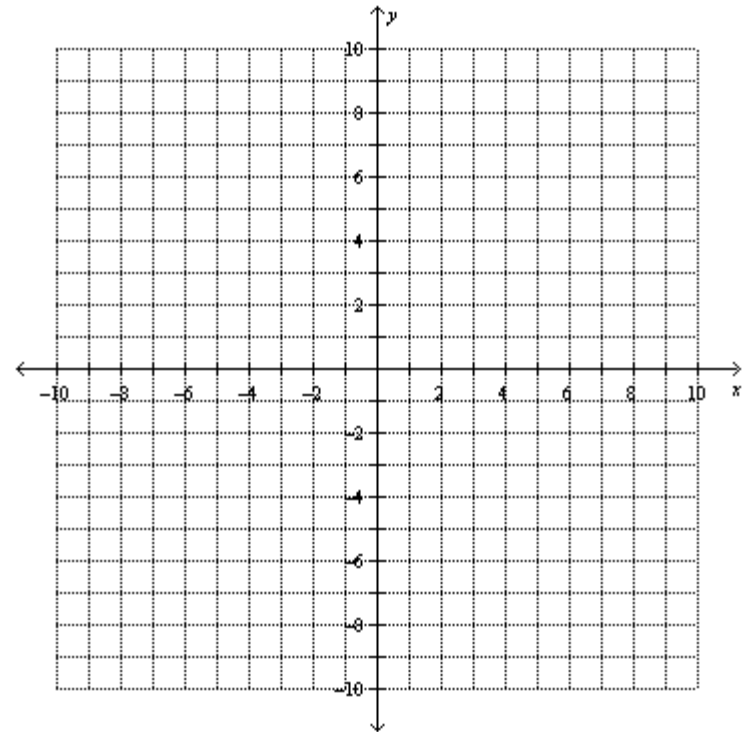
Slope in decimal form = _____

- What is the y-intercept on your line of best fit? _____
- Write the equation you get for your line of best fit (use decimal form for slope):
Y = _____
- Do a linear regression to find what the calculator thinks is the line of best fit: Y = _____

9. What is the slope in the regression equation in a fraction? _____
(Yes, you were supposed to round it to the 100th place.)

THERE IS NO X IN SLOPE!!!!!!!!!! THESE DO NOT ASK FOR SLOPE!!!!!!!!!!

- What is the slope of a line parallel to the equation in answer 8? _____
- What is the slope of a line perpendicular to the equation in answer 8? _____ (fraction form)
- What is the slope of a line that reflects the equation in answer 8? _____



- Referring to the equation in answer 8, what is the equation of a line that doubles the slope and translates the y intercept down 1 unit?

Y = _____

★ **There are no decimals in a fraction.**

X	Y
-7	5
3	-5
7	-7
-2	-1
1	-3

Percents: A number is a percent of a number

1. Joe went to the store to buy some DVD's for a party he was having. He found a good sale, each DVD was \$4.25. The sales tax rate in Joe's state is 8.65 percent. Round to 100ths place.

- A. What is the sales tax in decimal form? _____
- B. What is the sales tax on each DVD? _____
- C. What is the cost to buy each DVD?

- If Joe has \$22.00 to spend, how many DVDs can he buy? _____

• Show all work below:

2. Mary earned \$650 for her sales at her job this week. She earns a 6% commission on her sales.

A. What were her sales? _____

Show work:

B. If Mary sold \$14,000 and earned the exact same commission, what would her commission percent be? _____

Show work:

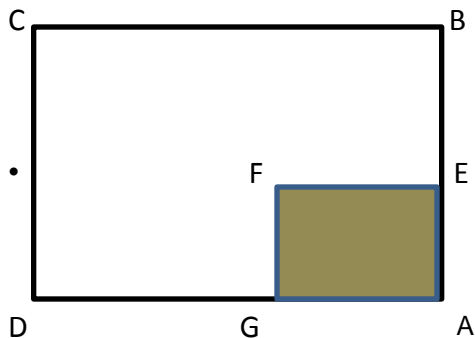
C. If Mary made a 4% commission and sold \$18,500, what would her commission be? _____

Show work:

Ratios Are your answers reasonable? Show work

1. In the figure below, the white rectangle and the black rectangle are similar.

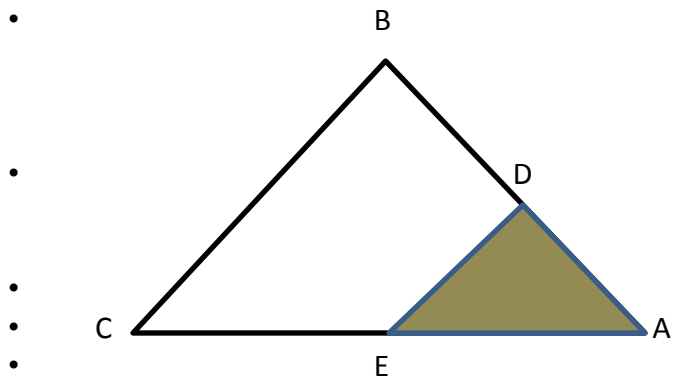
• $AE = 14$ $EB = 16$ and $AG = 22$



- A. What is DG ? _____ B. What is DA ? _____
 C. What is AB ? _____

2. In the figure below, the white triangle and the black triangle are similar.

• $AD = 15$ $AB = 25$ and $AE = 18$



- A. What is DB ? _____ What is CA ? _____
 B. What is CE ? _____

3. The mighty Mavericks have won 9 games and lost 7. If they continue winning and losing at the same rate:

A. Approximately how many games will they lose if they win 13 games? _____

B. How many games must they play total to lose 9 games?

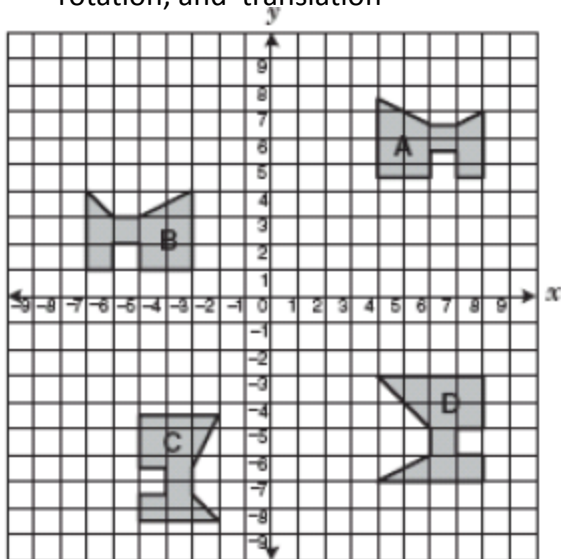
4. The mighty Mavericks have won 9 games and lost 11. If they continue winning and losing at the same rate:

A. Approximately how many games will they lose if they win 13 games? _____

B. How many games must they play total to win 15 games?

TRANSLATIONS, REFLECTIONS, ROTATIONS, SPATIAL RELATIONS, AND PATTERNS

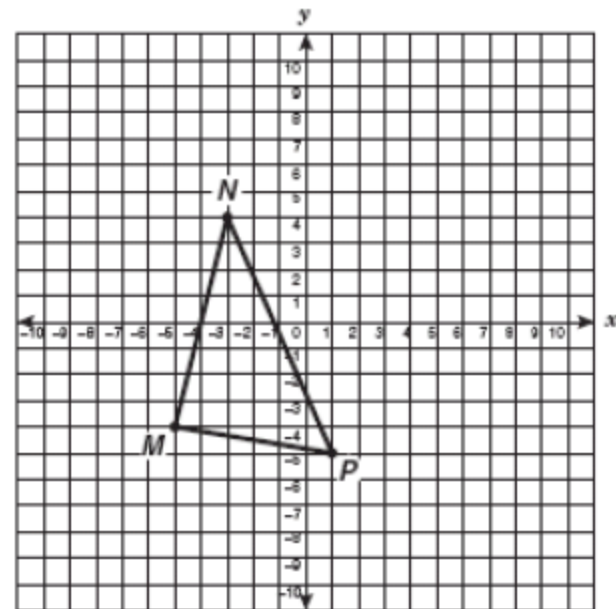
1. Which two polygons are a reflection, rotation, and a translation of each other? Describe the reflection, rotation, and translation



Answer:

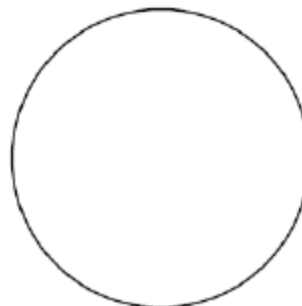
2. If $\triangle MNP$ is translated so that point $N(-3, 4)$ is mapped to point $N'(-1, 1)$, which ordered pair best represents either point M' or point P' ?

- A $M'(-2, -6)$
- B $P'(3, -8)$
- C $M'(4, -7)$
- D $P'(-7, -3)$

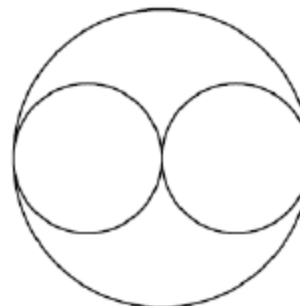


3. The figure shows the first 3 stages of a fractal. How many circles will the n th stage of this fractal contain?

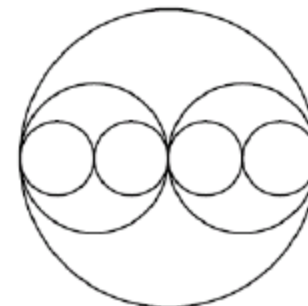
- F $2n$
- G 2^n
- H $2n - 1$
- J $2^n - 1$



Stage 1







Stage 2



Stage 3

4. According to the table, which expression best represents the number of white triangles at any stage, n , in this geometric pattern?

- A $(n - 1)^{n-1}$
 B $(2n - 1)^2$
 C 3^{n-1}
 D n^2

Stage, n	Number of White Triangles	Diagram
1	1	
2	3	
3	9	
4	27	

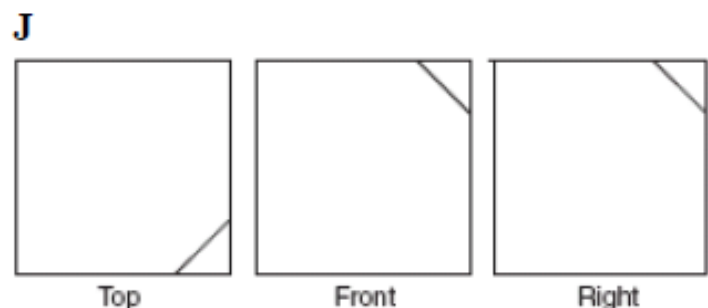
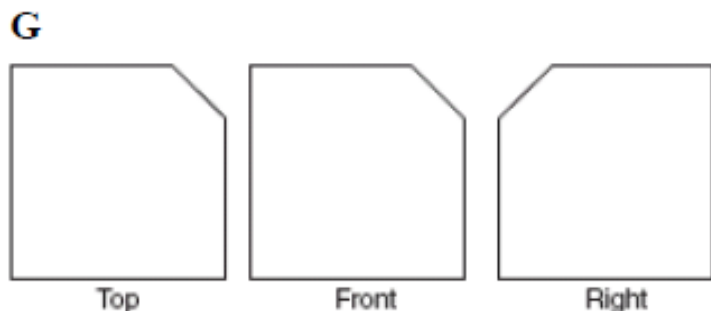
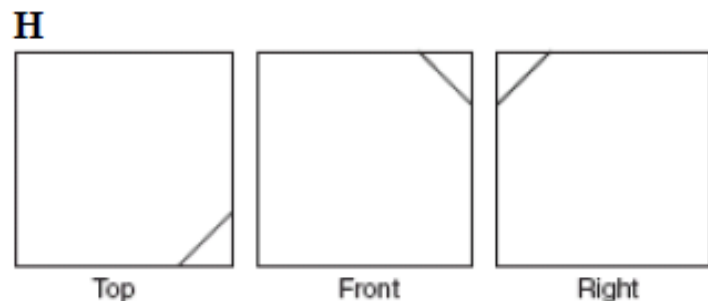
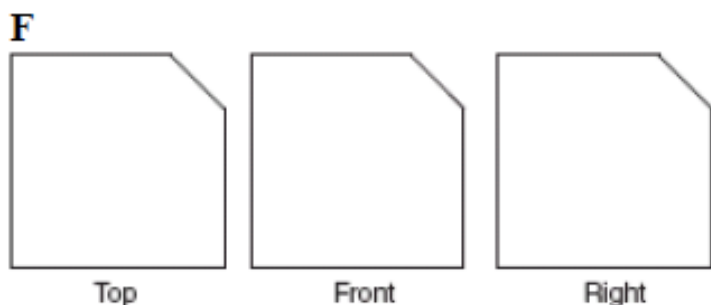
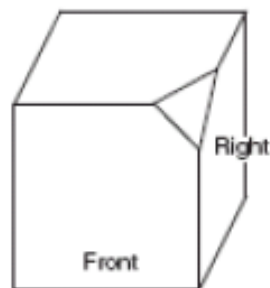
5) Use the table to determine the expression that best represents the number of diagonals of any convex polygon having n sides.

- A $n - 3$
 B $\frac{n - 3}{2}$
 C $\frac{n(n - 3)}{2}$
 D $n(n - 3)$

Polygon	Number of Sides	Number of Diagonals
Triangle	3	0
Quadrilateral	4	2
Pentagon	5	5
Hexagon	6	9
Heptagon	7	14
Octagon	8	20

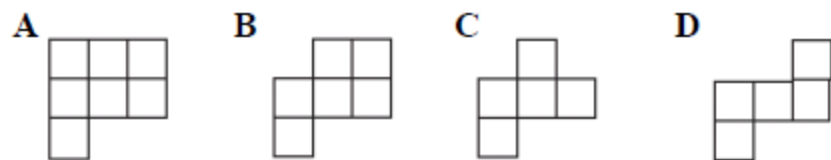
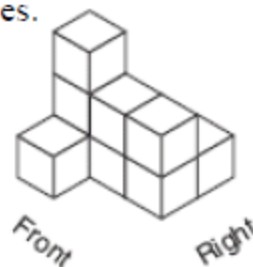
6. The figure shown below is a cube with a corner sliced off.

Which of the following sets of 2-dimensional drawings shows the top, front, and right views of the figure above?



7. The 3-dimensional figure shown below represents a structure that Corina built with 9 cubes.

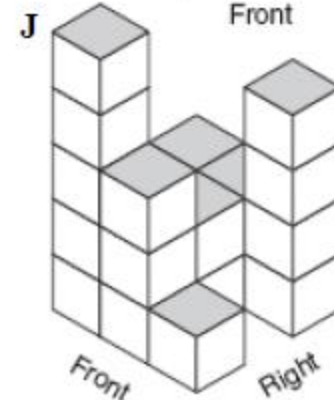
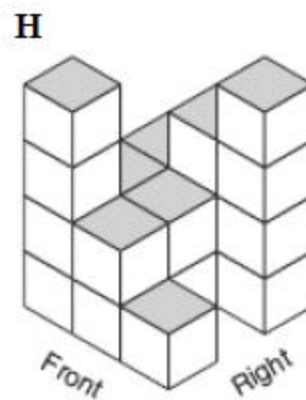
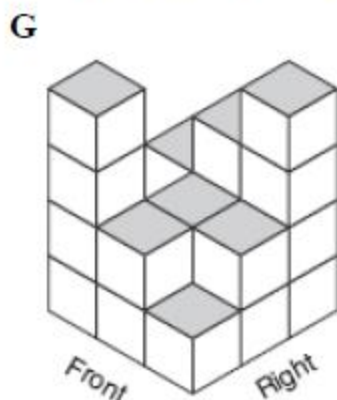
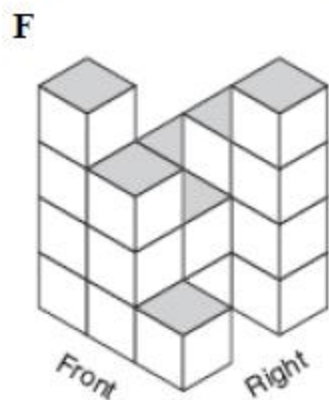
Which of the following best represents the top view of Corina's 9-cube structure?



8. The diagram below shows the top view of a structure built with identical cubes, as well as the number of cubes in each column of the structure.

2	3	4
2	2	
4	2	1

Which 3-dimensional view best represents the same structure?



9. Use the blocks to construct this shape then count

The front, side, and top views of a solid built of cubes are shown below.

How many cubes were needed to construct this solid?

- A 13
- B 14
- C 15
- D 21

