



"Strive, Achieve, Succeed"

BELLEVILLE HIGH SCHOOL

100 PASSAIC AVENUE

BELLEVILLE, NEW JERSEY 07109

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June 22, 2018

Dear Parents/Guardians and Students:

As a result of the implementation of the New Jersey Student Learning Standards (NJSLs), academic standards have become more rigorous and we would like our students to be able to demonstrate and communicate an in-depth understanding of the topics taught in mathematics. Our goal is not only to have the students master a particular skill, but also to be able to apply these skills in real-life situations.

In the summer time, many necessary mathematical skills are lost due to the absence of daily exposure. The loss of skills may result in a lack of success and unnecessary frustration for students as they begin the new school year. The purpose of this math assignment is to set the stage for instruction for the 2018-2019 school year.

For this reason, a summer packet has been prepared for all current eighth, ninth, tenth, and eleventh graders entering the following classes in September:

1. Algebra I
2. Geometry A and H
3. Algebra 2 A and H
4. Pre-calculus A and H
5. Statistics A and H

Students can access the summer packets for their scheduled course at the Belleville school district's website: www.bellevilleschools.org. Packets can be downloaded and printed out. Work can be done neatly in the packet, with answers clearly labeled. Students may also attach their work, if they choose to do the problems from the packet on separate sheets of paper. Problems must be numbered, all work must be included, and answers must be labeled. If you are unable to access an Internet connection, a limited number of copies will be available at the main office in Belleville High School. Students may also visit the Belleville Public Library to utilize their computers.

The summer assignment will be collected on Thursday, September 6, 2018 and assessed as a quiz grade based on the level of completion. The first week of instruction will be dedicated to covering prerequisite skills required for each course as found in the packet.

Each packet reviews the necessary foundational skills for the course and is accompanied by a study guide that includes both relevant notes and completed examples. Additional help could be found at www.khanacademy.org and <https://www.bellevillelearningacademy.com/>. Khan Academy is a free website for learning academic and real-world knowledge from tutorial videos. It is a great resource where you could find videos and examples from basic algebra through calculus. The Belleville Learning Academy provides student created content specific educational tutorials for peers.

Thank you very much for your support and cooperation. We look forward to working with you next year!

Sincerely,
The Belleville High School Mathematics Department

FOR ALL STUDENTS
GOING INTO
GEOMETRY
ACADEMIC
2018-2019

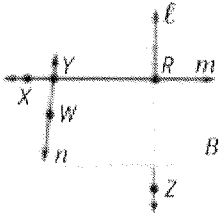
PRACTICE PROBLEMS

1) Solving Equations: please show all work

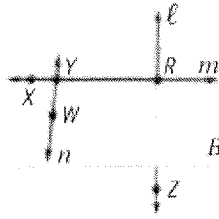
1) Translate into an equation: Two added to three times a number m is the same as 18.	2) Solve: $x + 12 = 6$	3) Solve: $h - 18 = -17$
4) Solve: $96 = -24a$	5) Solve: $\frac{5}{9}p = -10$	6) Solve: $2y + 5 = 19$
7) Solve: $\frac{b+1}{3} = 2$	8) Solve: $6(w - 1) = 3(3w + 5)$	9) Solve: $4n - 12 = 12 - 4n$

2) Points, Lines, and Planes

1) Name a line containing point X.

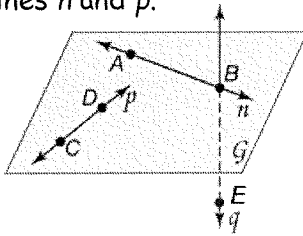


2) What is another name for line l ?



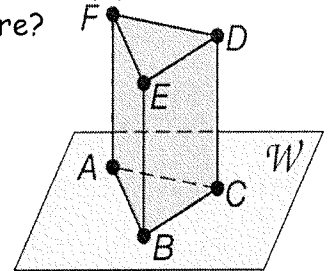
3) Draw and Label a figure: Point K lies on \overrightarrow{RT} .

4) Name the plane containing lines n and p .



5) Draw and label a figure: Lines q and f intersect at point Z in plane U .

6) How many planes are in the picture?

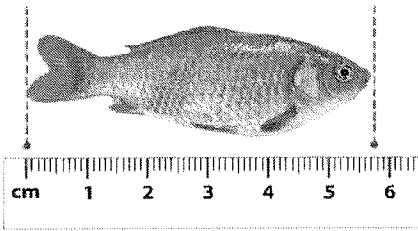


7) Refer to the picture in number 6: Name four points that are coplanar.

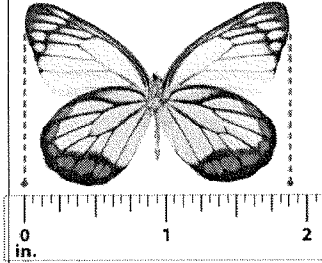
8) Refer to the picture in number 6: Are points A, B, and C coplanar? Explain.

3) Linear Measure

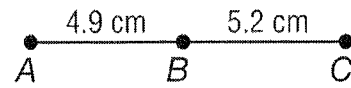
1) Find the length of the fish.



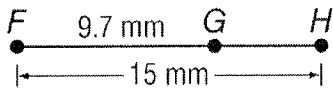
2) Find the length of the Butterfly.



3) Find the measurement of each segment. Assume that each figure is not drawn to scale. \overline{AC}

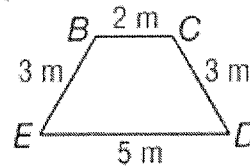


4) Find the measurement of each segment. Assume that each figure is not drawn to scale. \overline{GH}



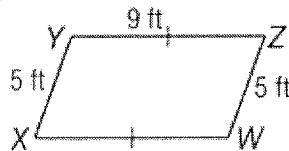
5) Find the value of x and YZ if Y is between X and Z .
 $XY = 5x$, $YZ = x$, and $XZ = 25$

6) Determine whether each pair of segments is congruent.
 \overline{BE} , \overline{CD}

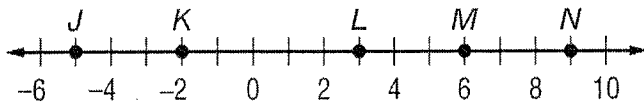


7) Find the value of x and YZ if Y is between X and Z .
 $XY = 4x$, $YZ = 3x$, and $XZ = 42$

8) Determine whether each pair of segments is congruent.
 \overline{WX} , \overline{WZ}



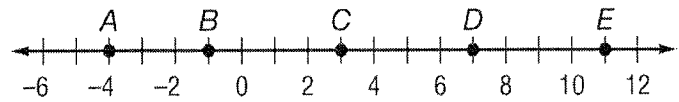
4) Distance and Midpoints



1) Use the number line to find each length.

A) KL

B) JN

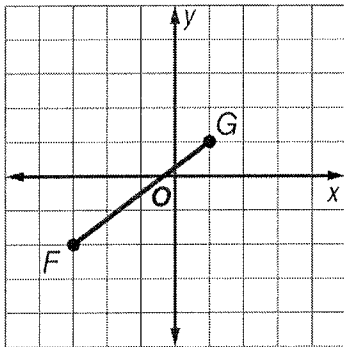


2) Use the number line to find the coordinate of the midpoint of each segment.

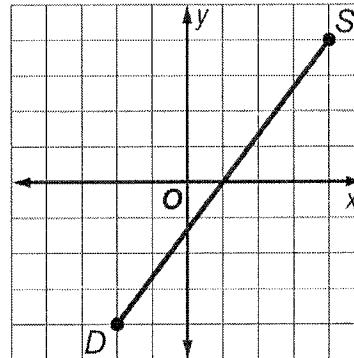
A) AD

B) AE

3) Find the distance between each pair of points.



4) Find the coordinates of the midpoint of a segment with the given endpoints.



5) Find the distance between each pair of points.

C(-3, 1), Q(2, 6)

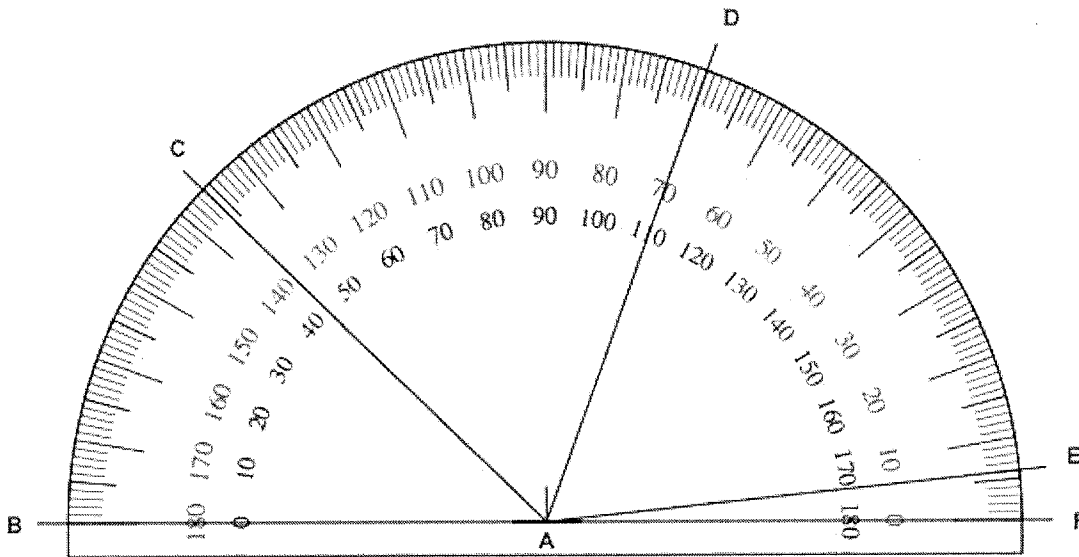
6) Find the coordinates of the midpoint of a segment with the given endpoints.

J(-4, 2), F(5, -2)

5) Angle Measure

1)

Find the measure of each angle in degrees.



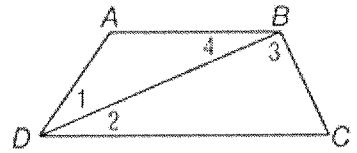
$\angle CAB$ _____ $\angle DAB$ _____ $\angle EAB$ _____

2)

Exercises

Refer to the figure at the right.

1. Name the vertex of $\angle 4$.
2. Name the sides of $\angle BDC$.
3. Write another name for $\angle DBC$.



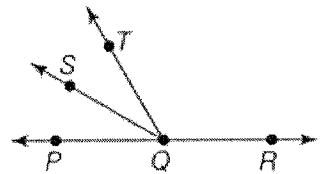
3)

Exercises

ALGEBRA In the figure \overrightarrow{QP} and \overrightarrow{QR} are opposite rays.

\overrightarrow{QS} bisects $\angle PQT$.

1. If $m \angle PQT = 60$ and $m \angle PQS = 4x + 14$, find the value of x .
2. If $m \angle PQS = 3x + 13$ and $m \angle SQT = 6x - 2$, find $m \angle PQT$.

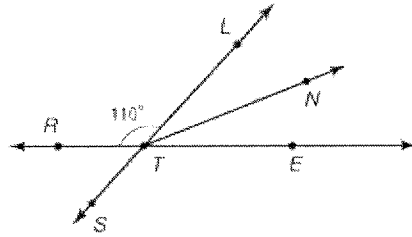


6) Angle Relationships

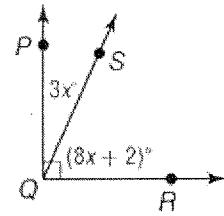
Exercises

Name an angle or angle pair that satisfies each condition.

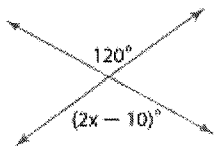
1. two adjacent angles
2. two acute vertical angles
3. two supplementary adjacent angles
4. an angle supplementary to $\angle RTS$



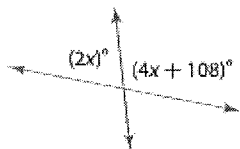
5. Find the value of x , $m \angle PQS$, and $m \angle SQR$.



6)



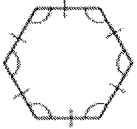
7)



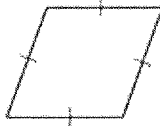
7) Two-Dimensional Figures

Name each polygon by its number of sides. Then classify it as *convex* or *concave* and *regular* or *irregular*.

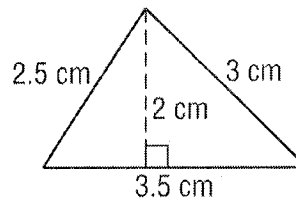
1.



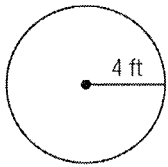
2.



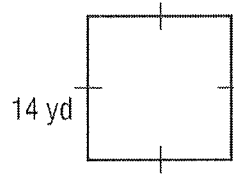
3) Find the perimeter or circumference and area of each figure. Round to the nearest tenth.



4) Find the perimeter or circumference and area of each figure. Round to the nearest tenth.

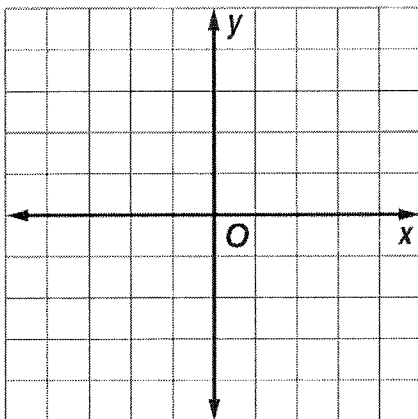


5) Find the perimeter or circumference and area of each figure. Round to the nearest tenth.



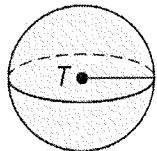
6) Graph each figure with the given vertices and identify the figure. Then find the perimeter and area of the figure.

$X(-3, -1)$, $Y(-3, 3)$, $Z(4, -1)$, $P(4, 3)$

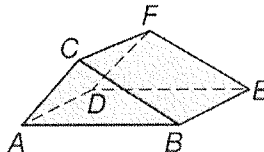


8) Three-Dimensional Figures

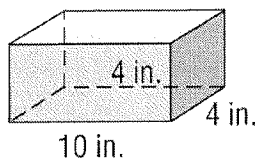
1) Determine whether each solid is a polyhedron. Then identify the solid. If it is a polyhedron, name the bases, faces, edges, and vertices.



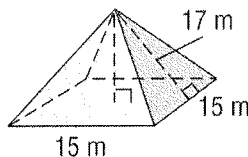
2) Determine whether each solid is a polyhedron. Then identify the solid. If it is a polyhedron, name the bases, faces, edges, and vertices.



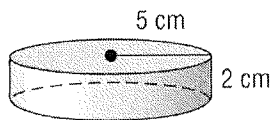
3) Find the surface area of each solid to the nearest tenth.



4) Find the surface area of each solid to the nearest tenth.



5) Find the volume of each solid to the nearest tenth.



6) Find the volume of each solid to the nearest tenth.

