Geometry Summer Assignment

All students scheduled for Geometry need to complete the following assignment prior to the first day of school. The Algebra skills represented are crucial to your success in this class. You will be asked to apply these skills throughout the year. In addition to the Algebra review, this assignment introduces several basic geometric terms. You will be tested on both the Algebra skills and Geometric vocabulary within the first week of school.

Algebra 1 Skills

A. Solving Linear Equations

1. $2x - 9 = 6$
2. $2(x - 3) = 84$
3. $2(4x - 3) + 4 = 5x - 6$

4. $2x + 5 + 4x + 7 = 180$
5. $3x + 5 = -16$
6. $x - 3(x - 7) = 4(x - 7) - 2x$

B. Simplifying Radicals

1. $\sqrt{40}$

2. $\sqrt{121}$

3. $\sqrt{\frac{4}{9}}$

4. $\sqrt{\frac{3}{7}}$

5. $\sqrt{80}$

6. $\sqrt{\frac{12}{8}}$

7. $\sqrt{36}$

8. $3\sqrt{24}$

9. $\frac{2}{\sqrt{12}}$
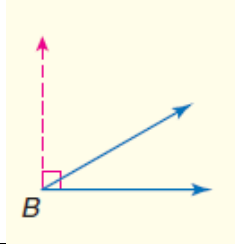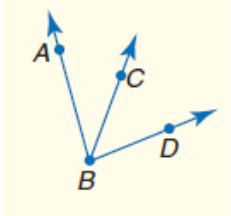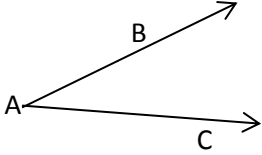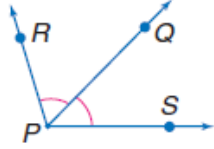
C. Solving Quadratic s by Factoring

1. $x^2 + 4x + 3 = 0$
2. $x^2 - 10x - 24$
3. $x^2 - 8x + 12 = 0$

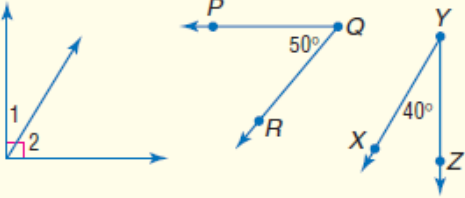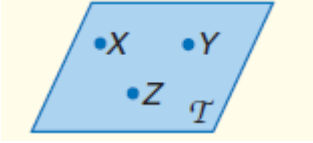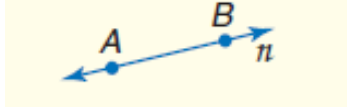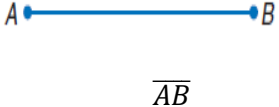4. $x^2 - 2x - 35 = 0$
5. $x^2 + 10x + 24 = 0$
6. $2x^2 + x - 3 = 0$

D. Slope and Equations for Lines
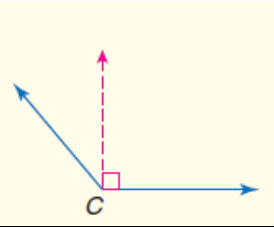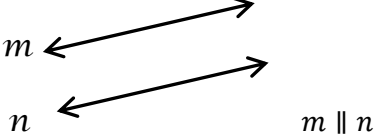
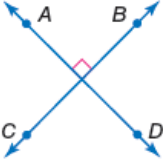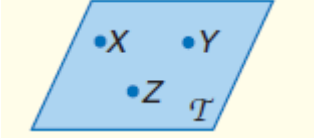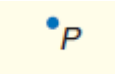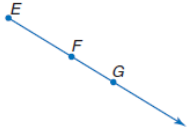Using the formula for slope $m = \left(\frac{y_2 - y_1}{x_2 - x_1}\right)$ and the y intercept form $(y = mx + b)$. Write equations for the following lines and then graph the equation.
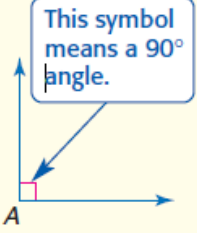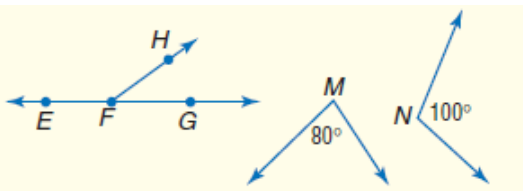
1. A line containing points (2, -4) and (-1,2)
2. A line parallel to $3x - y = 6$ through the point (-1, 3)

Geometry Vocabulary

Vocabulary	Definition/ Description	Example
Acute angle	An acute with a degree measure greater than 0 and less than 90.	B
Adjacent angles	Adjacent angles are angles that lie in the same plane and have a common vertex and a common side but no common interior points.	$\angle ABC$ and $\angle CBD$ are adjacent angles
Angle	The inter section of two noncollinear rays at a common endpoint. The rays are called sides and the common endpoint is called the vertex.	$\angle A$ $or \angle BAC$
Angle bisector	A ray that divides an angle into two congruent angles.	$\angle RPQ \cong \angle QPS$
Collinear	Points that lie on the same line.	$Point\ P, M, Q\ are\ collinear$

Complementary angles	Two angles that measures that have a sum of 90 degrees.	 ∠1 and ∠2 are complementary. ∠PQR and ∠XYZ are complementary.
Congruent	Having the same measures.	$\cong$ *is used to show congruent*
Coplanar	Points that lie on the same plane.	 *Points X, Y Z are coplanar*
Line	A basic undefined term of Geometry. A line is made up of points that have no thickness or width. Line is shown with arrowhead at each end. Usually named by a lower case script letter or by two capital letters for two points on the line with a line with double arrows over the pair of letters.	 *line n or* $\overleftrightarrow{AB}$
Line Segment	A measurable part of a line that consists of two points, called endpoints and all of the points between them. Usually named by a two capital letters for two points on the segment with a line (with no arrows) over the pair of letters.	 $\overline{AB}$
Midpoint	The point on a segment exactly halfway between the endpoints.	 *M is the midpoint of* $\overline{XY}$ *then* $\overline{XM} \cong \overline{MY}$

Obtuse angle	An angles with a degree measure greater than 90 but less than 180.	
Opposite rays	Two collinear rays with a common endpoint extending in different directions.	 $\overrightarrow{PR}$ and $\overrightarrow{PQ}$ are opposite rays
Parallel lines	Coplanar lines that do not intersect.	 $m \parallel n$
Perpendicular lines	Lines that intersect to form right angles.	 $\overleftrightarrow{AD} \perp \overleftrightarrow{BC}$
Plane	A basic undefined term of geometry. A plane is a flat surface made up of points that has no depth and extends indefinitely in all directions. It is represented by a slanted four-sided figure. Planes are usually names by a capital script letter or by three noncollinear points on the plane.	 Plane XYZ or Plane $\mathcal{T}$
Point	A basic undefined term of geometry. A point is a location represented by a dot. Points are named by capital printed letter.	
Ray	A ray is part of a line. It has one endpoint extending indefinitely in one direction. . Usually named by a two capital letters for two points on the ray with a line with one arrow over the pair of letters.	 $\overrightarrow{EG}$

Right Angle	An angle with a degree measure equal to 90.	This symbol means a 90° angle. A
Segment bisector	A segment, line or plane that intersects a segment at its midpoint.	
Supplementary angles	Two angles that measures that have a sum of 180 degrees.	H E F G M 80° N 100° ∠EFH and ∠HFG are supplementary. ∠M and ∠N are supplementary.