	Geometry	Test 4	Scope: Chapter 4	Total score: ____of 100	Name

1. a) $2x^2 + 4x - 3$.

   b) $8x - 5y$.

   c) $5x^2 + 18x - 8$.

   d) $36x^2 + 12xy + y^2$.

2. a) $AG = GD$.

   b) *If two angles of a triangle are equal, the sides opposite them are equal.*

3. a) SAS

   b) not enough information to state that they are congruent

   c) ASA

   d) not enough information to state that they are congruent

4. a) *SSS.*

   b) *Corresponding parts of congruent triangles are equal.*

   c) *A triangle is equilateral if all of its sides are equal.*

   d) *An equilateral triangle is equiangular.*

   e) *A triangle is isosceles if it has at least two equal sides.*

   f) *If two sides of a triangle are equal, the angles opposite them are equal.*

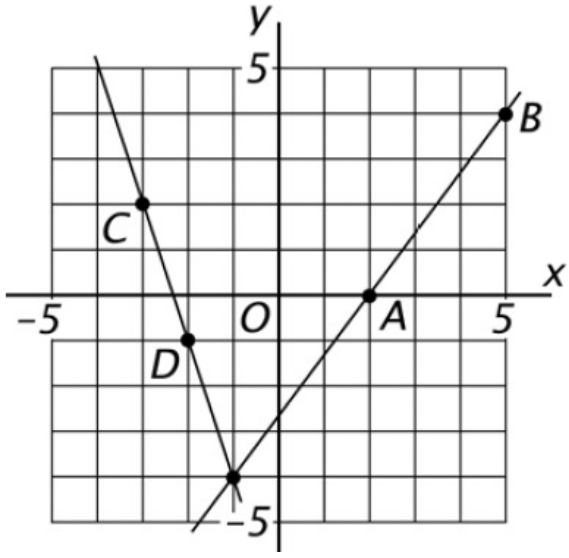
5. a) $\angle S = 45^\circ$. (Since $EV \perp VS$, $\angle V$ is a right angle and so $\angle V = 90^\circ$; $\angle S = 180^\circ - 90^\circ - 45^\circ = 45^\circ$.)

   b) ΔVES is a right triangle and it is also isosceles.

   c) $ES^2 = EV^2 + VS^2$.

   d) $93^2 = x^2 + x^2$; $2x^2 = 8{,}649$; $x^2 = 4{,}324.5$; $x \approx 66$. VS is approximately 66 million miles.

6.



b) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

c) $AB = \sqrt{(5 - 2)^2 + (4 - 0)^2} = \sqrt{3^2 + 4^2}$

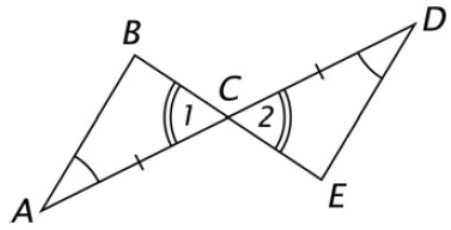
$= \sqrt{9 + 16} = \sqrt{25} = 5.$

d) $CD = \sqrt{(-2 - -3)^2 + (-1-2)^2}$

$= \sqrt{1^2 + (-3)^2} = \sqrt{1 + 9} = \sqrt{10}.$

e) $(-1, -4)$.

7.



Given: C is the midpoint of AD; ∠1 and ∠2 are vertical angles; ∠A = ∠D.

Prove: AB = DE.

Proof:

Statements	Reasons
1. C is the midpoint of $\overline{AD}$.	1. Given
2. AC = CD	2. The midpoint of a line segment divides it into two equal parts.
3. ∠1 & ∠2 are vertical angles	3. Given
4. ∠1 = ∠2	4. Vertical angles are equal
5. ∠A = ∠D	5. Given
6. △ABC ≅ △DEC	6. ASA
7. AB = DE	7. CPCTC