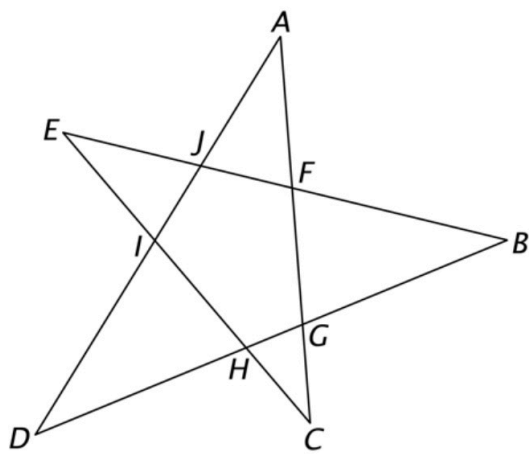




- Do as indicated.
  - $(x^2 - x + 7) + (x^2 + 5x - 10)$ .
  - $(9x - 2y) - (x + 3y)$ .
  - $(x + 4)(5x - 2)$ .
  - $(6x + y)^2$ .

- The 5 line segments that form this star meet at their endpoints so that  $\angle A = \angle B = \angle C = \angle D = \angle E$ .

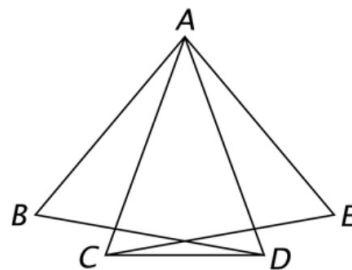


- What can you conclude about AG and GD?
- State the theorem that is the basis for your answer.

- Are the triangles congruent? How do you know?

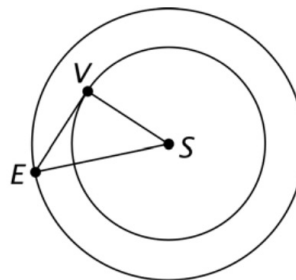
<p>a)</p>	<p>b)</p>
<p>c)</p>	<p>d)</p>

- In this figure,  $AB = AC = AD = AE = BD = CE$ .



Tell why each of the following statements must be true.

- $\triangle ABD \cong \triangle AEC$ .
  - $\angle B = \angle E$ .
  - $\triangle ABD$  and  $\triangle AEC$  are equilateral.
  - $\triangle ABD$  and  $\triangle AEC$  are equiangular.
  - $\triangle ACD$  is isosceles.
  - $\angle ACD = \angle ADC$ .
- This figure shows positions of the earth, E, and Venus, V, in their orbits around the sun, S. It can be used to estimate the distance from Venus to the sun.



Given that  $EV \perp VS$  and  $\angle E = 45^\circ$ ,

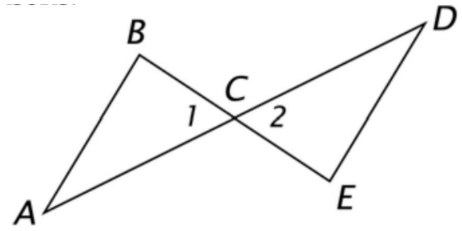
- find  $\angle S$ .
- what can you conclude about  $\triangle VES$ ? Explain.
- write an equation relating the lengths of the sides of  $\triangle VES$ .

Given also that  $ES = 93$  million miles,

- find  $VS$  to the nearest million miles.

6. On graph paper, draw a pair of axes extending 5 units in each direction from the origin.
- Plot the following points:  $A(2, 0)$ ,  $B(5, 4)$ ,  $C(-3, 2)$ ,  $D(-2, -1)$ . Use your ruler to draw lines  $AB$  and  $CD$  across the grid.
  - Write the formula for the distance between two points,  $P_1(x_1, y_1)$  and  $P_2(x_2, y_2)$ .  
Use the formula to find the exact distance between
    - $A$  and  $B$ .
    - $C$  and  $D$ .
  - What are the coordinates of the point that is collinear with  $A$  and  $B$  and also collinear with  $C$  and  $D$ ?

7. Write a complete proof for the following. Copy the figure and mark the given information on it. Also copy the "given" and "prove" before writing your statements and reasons.



*Given:*  $C$  is the midpoint of  $AD$ ;  $\angle 1$  and  $\angle 2$  are vertical angles;  $\angle A = \angle D$ .

*Prove:*  $AB = DE$ .



1. a) \_\_\_\_\_

f) \_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

c) \_\_\_\_\_

\_\_\_\_\_

d) \_\_\_\_\_

5. a) \_\_\_\_\_

2. a) \_\_\_\_\_

\_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. a) \_\_\_\_\_

c) \_\_\_\_\_

b) \_\_\_\_\_

d) \_\_\_\_\_

c) \_\_\_\_\_

d) \_\_\_\_\_

4. a) \_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

c) \_\_\_\_\_

\_\_\_\_\_

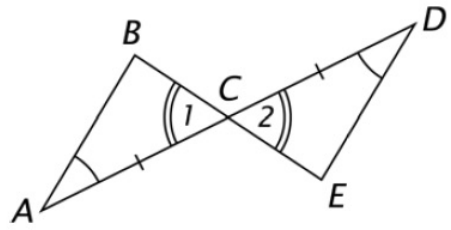
d) \_\_\_\_\_

\_\_\_\_\_

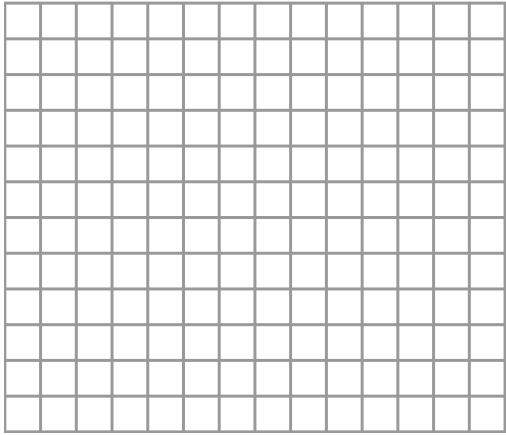
e) \_\_\_\_\_

\_\_\_\_\_

7.



6. a)



b) \_\_\_\_\_

c) \_\_\_\_\_

\_\_\_\_\_

d) \_\_\_\_\_

\_\_\_\_\_

e) \_\_\_\_\_

*Given:* C is the midpoint of AD;  $\angle 1$  and  $\angle 2$  are vertical angles;  $\angle A = \angle D$ .

*Prove:*  $AB = DE$ .

*Proof:*

Statements	Reasons