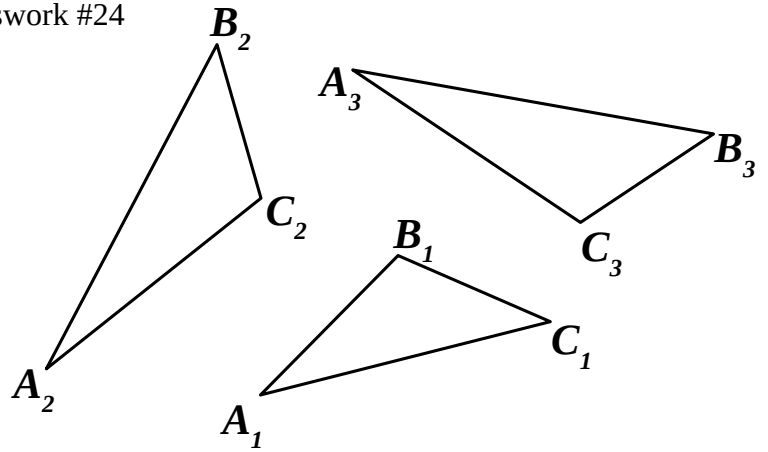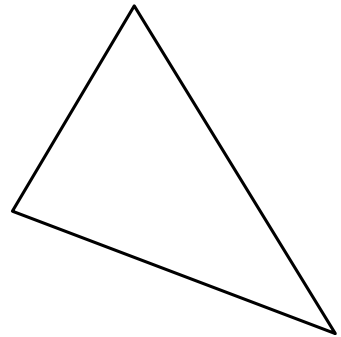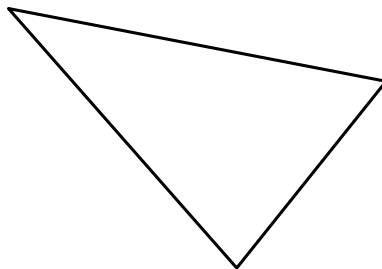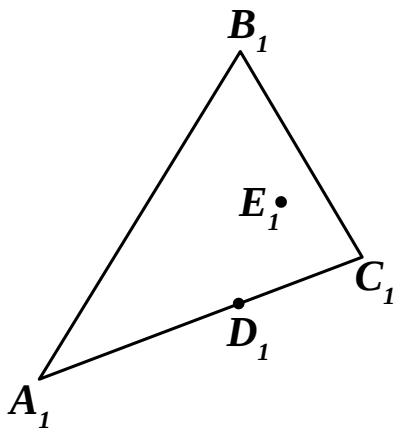*Congruency of triangles:*

Two triangles are congruent if their points may be matched in a way that preserves distances.

**1.** Find which triangles on the picture are congruent.

B_2

A_3

B_3

C_2

B_1

C_3

C_1

A_2

A_1

| Two triangles are equal when all three their sides are equal |

2. Show that all three triangles are congruent. Find points matching points A_1 through E_1.

B_1
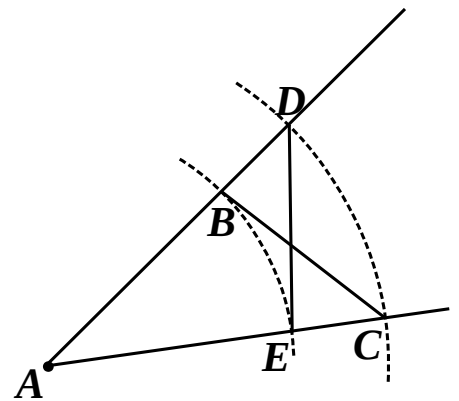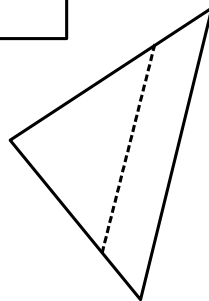
E_1

C_1

D_1

A_1

| Major Traits for the congruency of triangles:
1. By three sides;
2. By two sides and an angle between them;
3. By a side and two adjacent angles. |

C

A

B
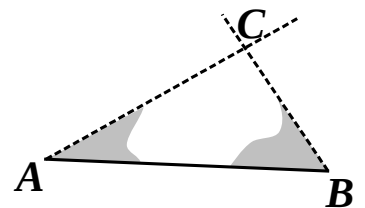
| In congruent triangles equal angles are opposite of the equal sides. |

D

B

| Two triangles with all equal angles may not be congruent. |

A

E

C

Distributive property with squares and crossproducts:

3. Remove parenthesis:

$2 \cdot (x + a + 1) =$ _____ $x \cdot (x + a + 1) =$ _____

$2 \cdot (x - 1 + w) =$ _____ $x \cdot (x - 1 + w) =$ _____

$2x \cdot (x + 3 + y) =$ _____ $2x \cdot (x - 5 + y) =$ _____

$x \cdot (2x + 7 + a) =$ _____ $x \cdot (2x - 2 - a) =$ _____

$3x \cdot (2x + 4 - 3y) =$ _____ $3x \cdot (2x - 9 + 4y) =$ _____
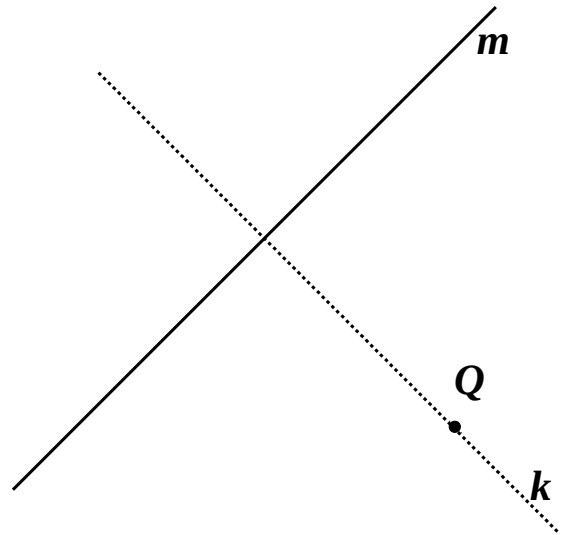
4. Plot images of the shapes using the lines of symmetry:
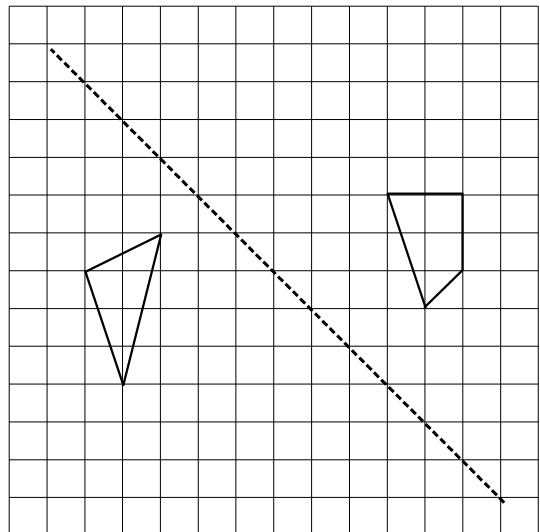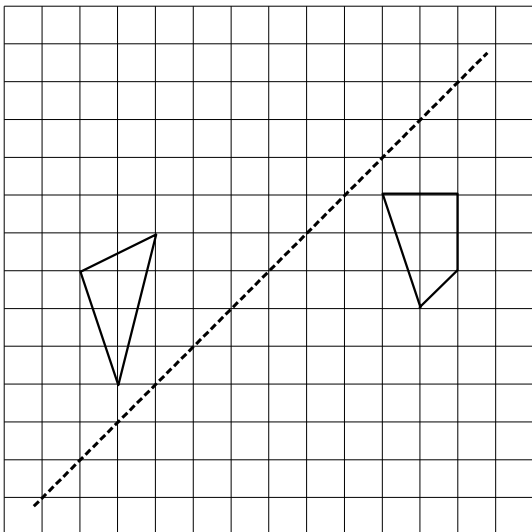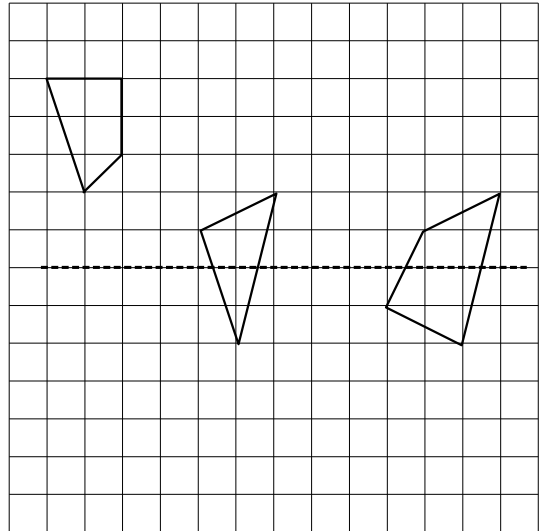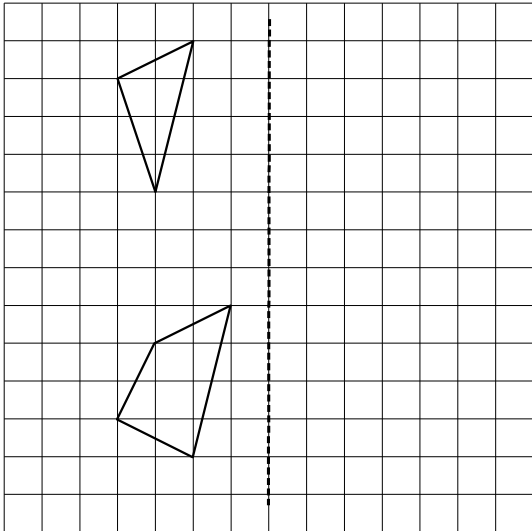
Intersections of a straight line and a family of concentric circles

5. Plot the circles. Analyze their intersections with the line *m*.

A. Plot *a* = Circ(*Q*, 7 cm)

B. Plot *b* = Circ(*Q*, 6 cm)

C. Plot *c* = Circ(*Q*, 5 cm)

D. Plot *d* = Circ(*Q*, 4 cm)

E. Plot *e* = Circ(*Q*, 3 cm)

6. Plot the circles. Analyze their intersections with the circle *m*.

A. Plot *a* = Circ(*Q*, 7 cm)

B. Plot *b* = Circ(*Q*, 6 cm)

C. Plot *c* = Circ(*Q*, 5 cm)

D. Plot *d* = Circ(*Q*, 4 cm)

E. Plot *e* = Circ(*Q*, 3 cm)