

Polygon Symmetry

1. For each property below draw triangles, quadrilaterals, and other polygons with that property.
 - (a) No lines of reflectional symmetry
 - (b) Exactly one line of reflectional symmetry
 - (c) Exactly two lines of reflectional symmetry
 - (d) Exactly three lines of reflectional symmetry
 - (e) Exactly four lines of reflectional symmetry
 - (f) Exactly five lines of reflectional symmetry
 - (g) Exactly n lines of reflectional symmetry
 - (h) No rotational symmetry
 - (i) 180 degree rotational symmetry but no smaller rotational symmetry
 - (j) 120 degree rotational symmetry but no smaller rotational symmetry
 - (k) 90 degree rotational symmetry but no smaller rotational symmetry
 - (l) 72 degree rotational symmetry but no smaller rotational symmetry
 - (m) $360/n$ degree rotational symmetry but no smaller rotational symmetry

2. For each of the types of polygon below, create a definition in terms of the number of sides and the types of symmetry it must possess
 - (a) Scalene triangle
 - (b) Isosceles triangle
 - (c) Equilateral triangle
 - (d) Rectangle
 - (e) Square
 - (f) Parallelogram
 - (g) Rhombus
 - (h) Isosceles trapezoid
 - (i) Kite
 - (j) Regular pentagon
 - (k) Regular n -sided polygon