

1 - 6
Polygons

polygon: a closed figure whose sides are all segments

Examples:

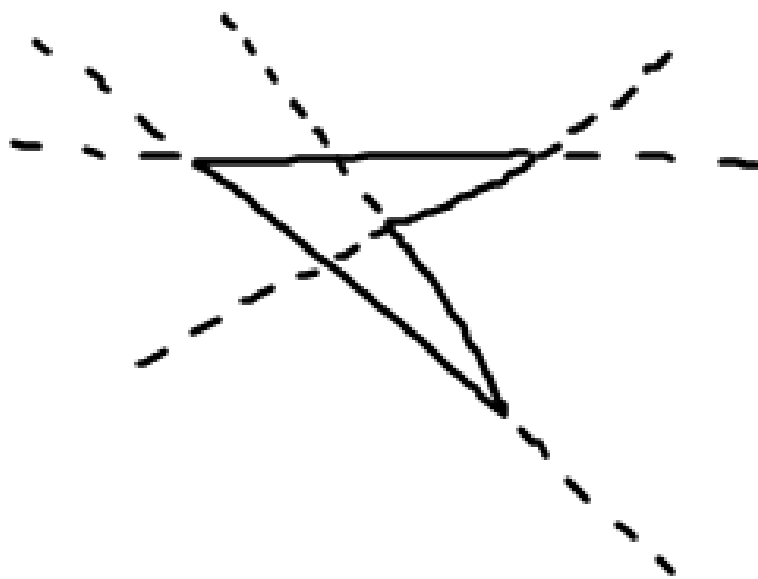


Non-Examples:



polygons can be concave or convex

CONCAVE



CONVEX

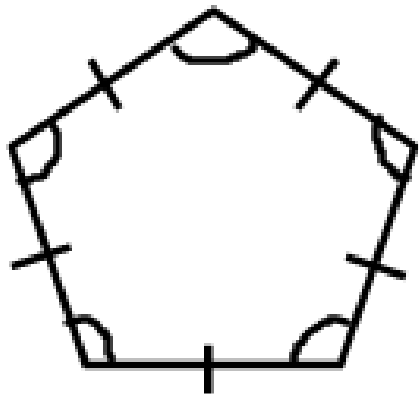


think "rubberband"

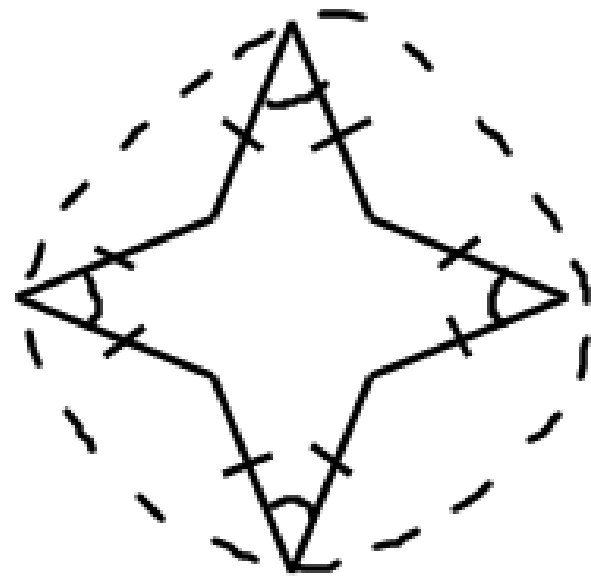
# of sides	polygon
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
12	dodecagon
n	n-gon

regular polygon: convex with all
sides \cong and all angles \cong

Name each polygon by its number of sides. Then classify each as convex or concave and regular or irregular.



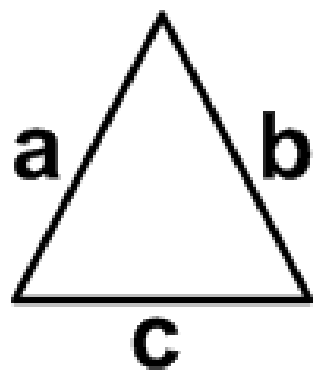
pentagon
convex
regular



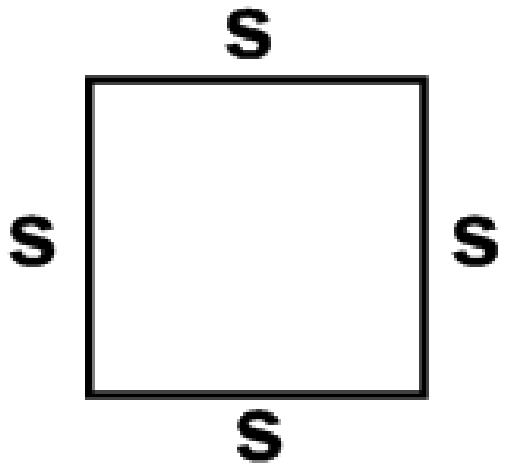
octagon
concave
irregular

perimeter: sum of the lengths of the sides

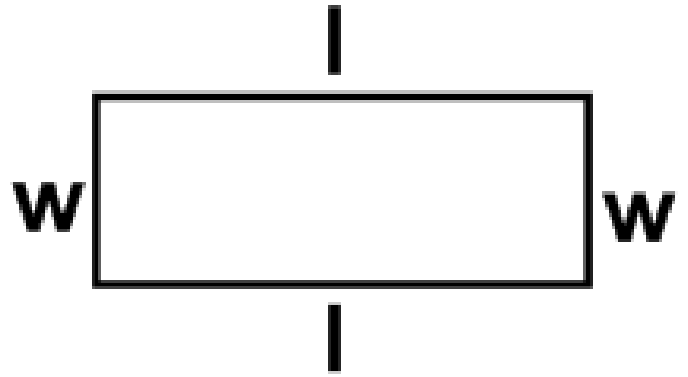
Examples:



$$a + b + c$$

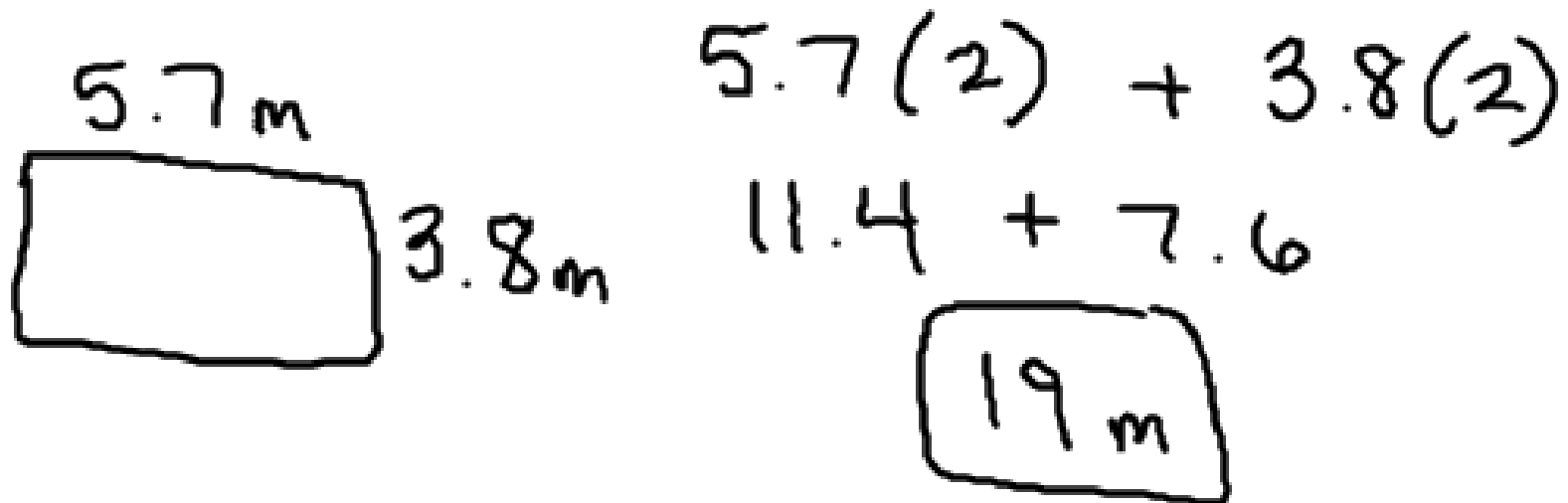


$$4s$$



$$2l + 2w$$

Ex: A landscaper is putting edging around a rectangular flower bed with length 5.7m and width 3.8m. How much edging does he need to buy?



Ex: Find the perimeter of $\triangle PQR$ if $P(-5, 1)$, $Q(-1, 4)$, $R(-6, -8)$.

$$d = \sqrt{(x-x)^2 + (y-y)^2}$$

$$PQ = \sqrt{(-5+1)^2 + (1-4)^2} = \sqrt{16+9} = 5$$

$$QR = \sqrt{(-1+6)^2 + (4+8)^2} = \sqrt{25+144} = 13$$

$$PR = \sqrt{(-5+6)^2 + (1+8)^2} = \sqrt{1+81} \approx 9.1$$

27.1