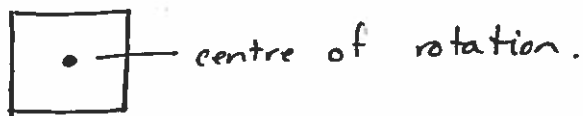


B: Rotation Symmetry and Transformations

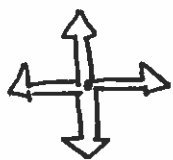
• centre of rotation

- point about which the rotation of an object turns.



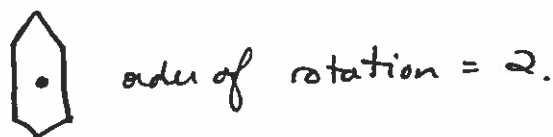
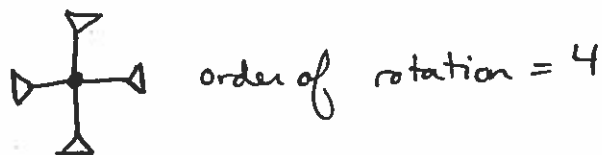
• rotation symmetry

- an object has rotation symmetry if when it is "turned" it fits onto itself more than once in a complete turn.



• order of rotation

- the number of times an object will fit onto itself in one complete turn.



• angle of rotation

- minimum measure of the angle needed to "turn" an object onto itself.

Degrees

$$\text{a.o.r} = \frac{360^\circ}{\text{order}}$$



$$\text{a.o.r} = \frac{360^\circ}{4} = 90^\circ$$

Fraction of Turn

$$\text{a.o.r} = \frac{1 \text{ turn}}{\text{order}}$$



$$\text{a.o.r} = \frac{1 \text{ turn}}{4} = \frac{1}{4} \text{ turn.}$$

Name: _____

Date: _____

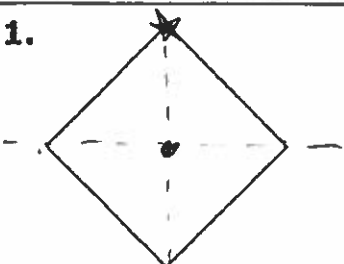
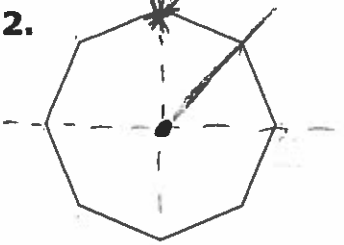
BLM 1-9

Section 1.2 Extra Practice B: Rotational Symmetry
 : Transformations

For #1 and 2, fill in the missing information.

a) What is the order of rotation?

b) What is the angle of rotation? Express in degrees and as a fraction of a turn.

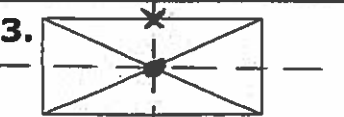
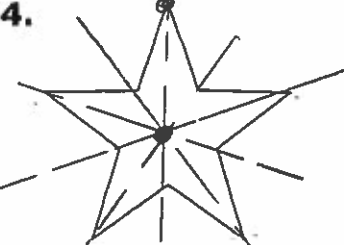
	a) Order	b) Angle
1. 	4	$\frac{360^\circ}{\text{order}}$ $= \frac{360}{4}$ $= 90^\circ$ $\frac{1}{\text{order}}$ $= \frac{1}{4}$
2. 	8	$= \frac{360^\circ}{8}$ $= 45^\circ$ $= \frac{1}{8}$

For #3 and 4, fill in the missing information.

a) What is the number of lines of symmetry?

b) What is the order of symmetry?

rotational

	a) Number	b) Order
3. 	2	2
4. 	5	5

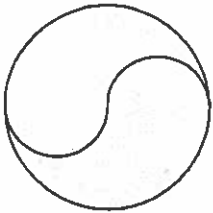
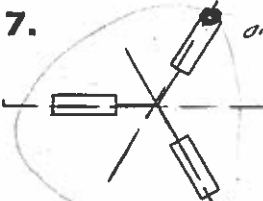
5. Draw the lines of symmetry and show the centre of rotation for the shapes in #3 and 4.

intersection of all lines of symmetry.

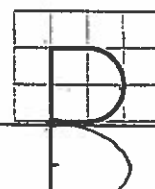
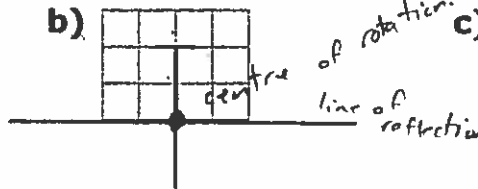
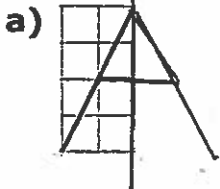
Name: _____

Date: _____

- For #6 and 7, fill in the missing information.
 a) What is the number of lines of symmetry?
 b) What is the angle of rotation?

	a) Number	b) Angle
6.  <i>order = 2</i>	0	$\frac{360^\circ}{2}$ $= 180^\circ$ $\frac{1}{2}$ turn
7.  <i>order = 3</i>	3	$\frac{360^\circ}{3}$ $= 120^\circ$ $\frac{1}{3}$ turn

8. The following capital letters are only half drawn. Complete the letters and draw the line(s) of reflection and/or the centre(s) of rotation of the completed letters.



* knew how to name the lines.
line of reflection.

- d) Which letter can be completed using a reflection or a translation? Explain your answer.

The letter B can be created by a vertical translation 2 units down.

Pg. 21 #4, 6, 7, 9, 12a, 13, 14, 16, 19