Quiz 07, MAT115, Spring 2024
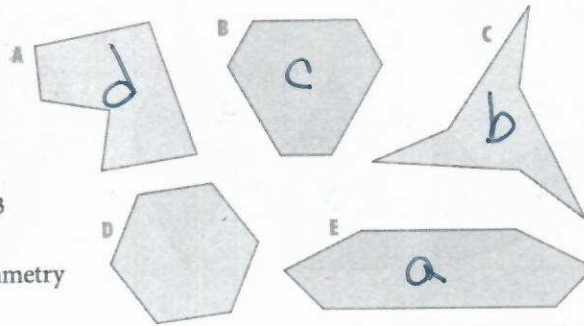
Name:

#1 (2 pts) To the left of each letter (e.g. (a)), write the correct letter of the shape satisfying the requirements:

E1 All these shapes are hexagons.
Which hexagon has

- E (a) only one line of symmetry
- C (b) rotation symmetry but no reflection symmetry
- B (c) rotation symmetry of order 3 and 3 lines of symmetry
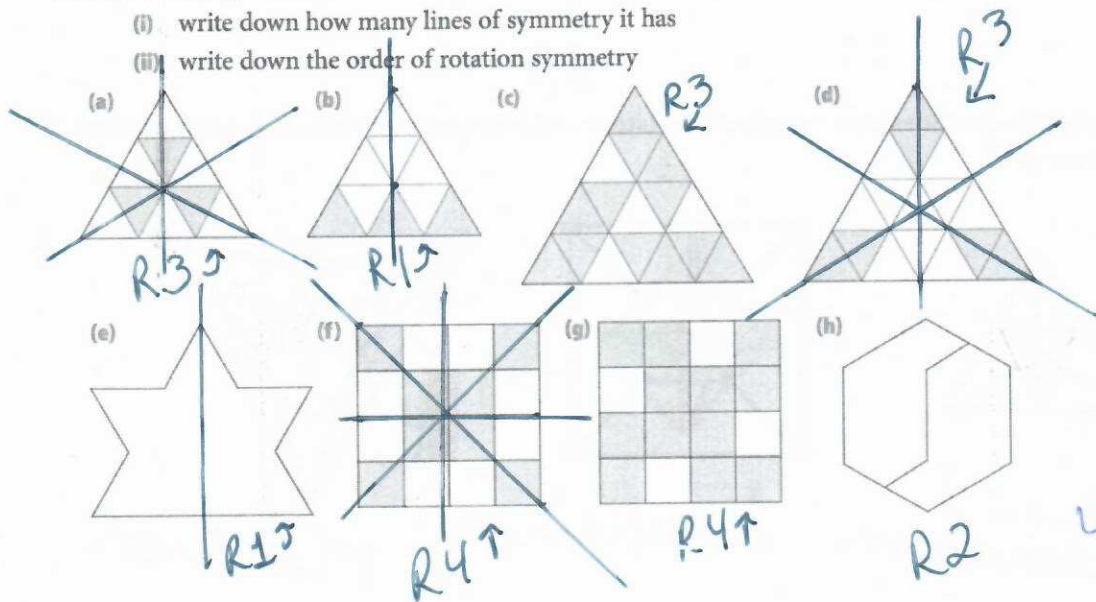- A (d) no reflection or rotation symmetry

#2 (3 pts) : Add the appropriate lines of symmetry to each diagram, and write the order of rotation (e.g. "R2") to the left of each figure:

C1 For each design below

    (i) write down how many lines of symmetry it has
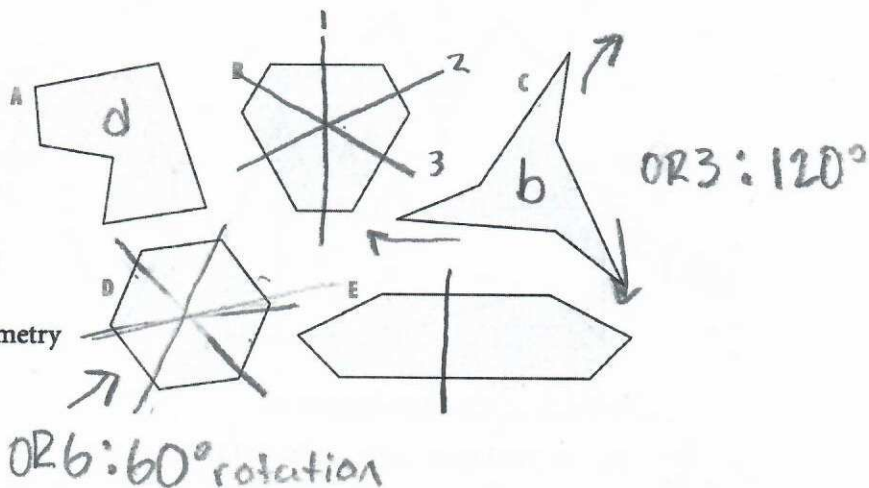
    (ii) write down the order of rotation symmetry

(a) R3

(b) R1

(c) R3

(d) R3

(e) R1

(f) R4

(g) R4

(h) R2

#1 (2 pts) To the left of each letter (e.g. (a)), write the correct letter of the shape satisfying the requirements:

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E (a) only one line of symmetry

C (b) rotation symmetry but no reflection symmetry

B (c) rotation symmetry of order 3 and 3 lines of symmetry

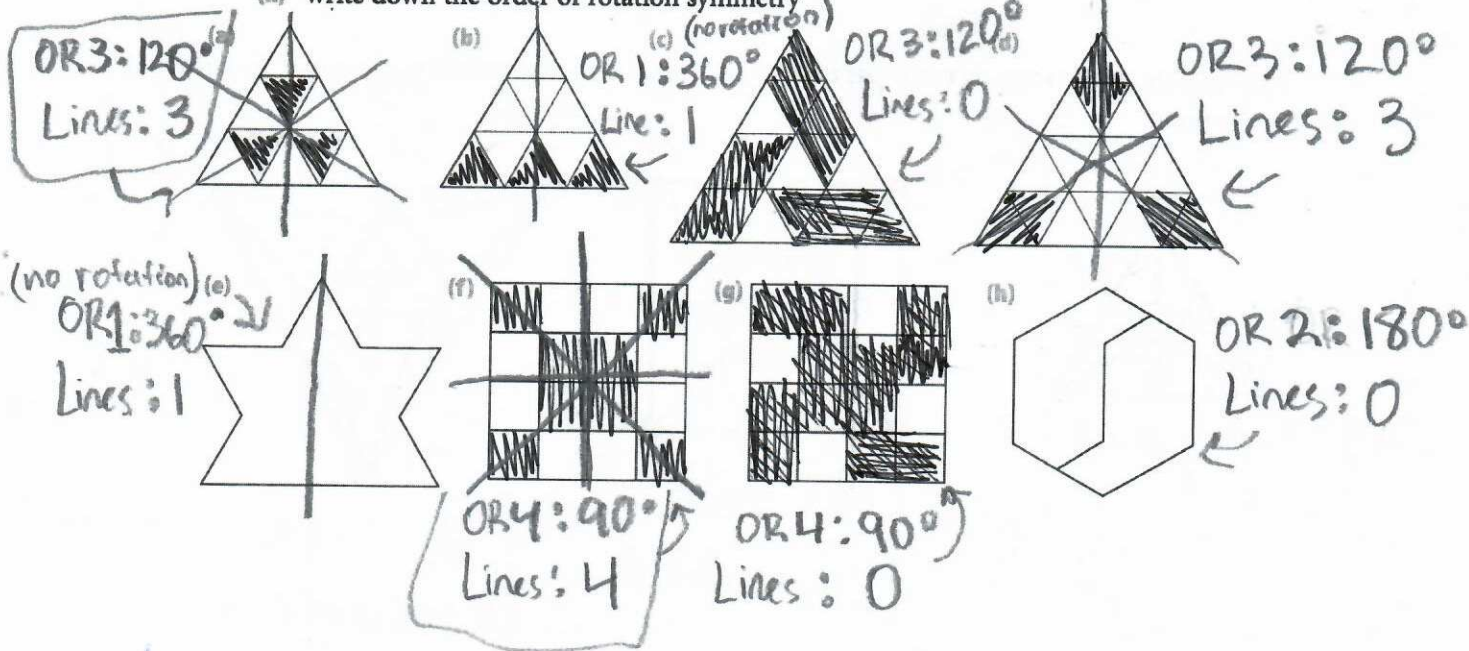**A** (d) no reflection or rotation symmetry ✓

OR3: 120°

OR6: 60° rotation

#2 (3 pts) : Add the appropriate lines of symmetry to each diagram, and write the order of rotation (e.g. "R2") to the left of each figure:

C1 For each design below

(i) write down how many lines of symmetry it has

(ii) write down the order of rotation symmetry

(a) OR3: 120°   Lines: 3

(b) (no rotation) OR 1: 360°   Line: 1

(c) OR3: 120°   Lines: 0

(d) OR3: 120°   Lines: 3

(e) (no rotation) OR1: 360°   Lines: 1

(f) OR4: 90°   Lines: 4

(g) OR4: 90°   Lines: 0

(h) OR2: 180°   Lines: 0

Nice work!

#3 (2 pts) : To the left of each letter (e.g. (a)), write the correct letter of the shape satisfying the requirements:
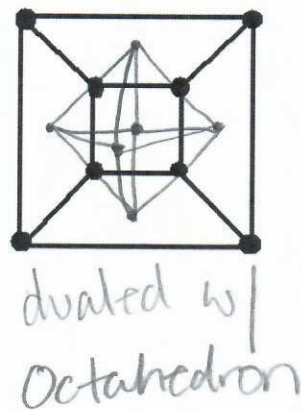
E2 Here are some polygons.
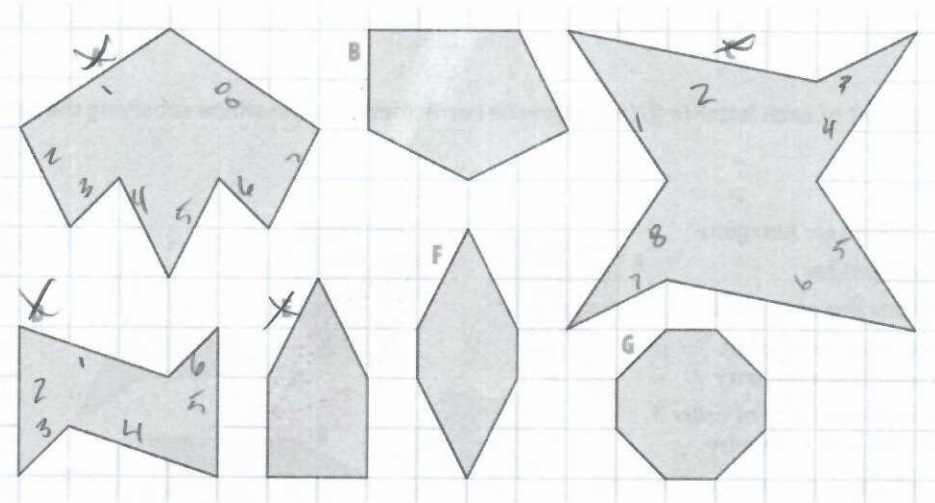
Which of these polygons is

E (a) a pentagon with reflection symmetry

H (b) an octagon with reflection symmetry but no rotation symmetry

D (c) a hexagon with rotation symmetry but no reflection symmetry

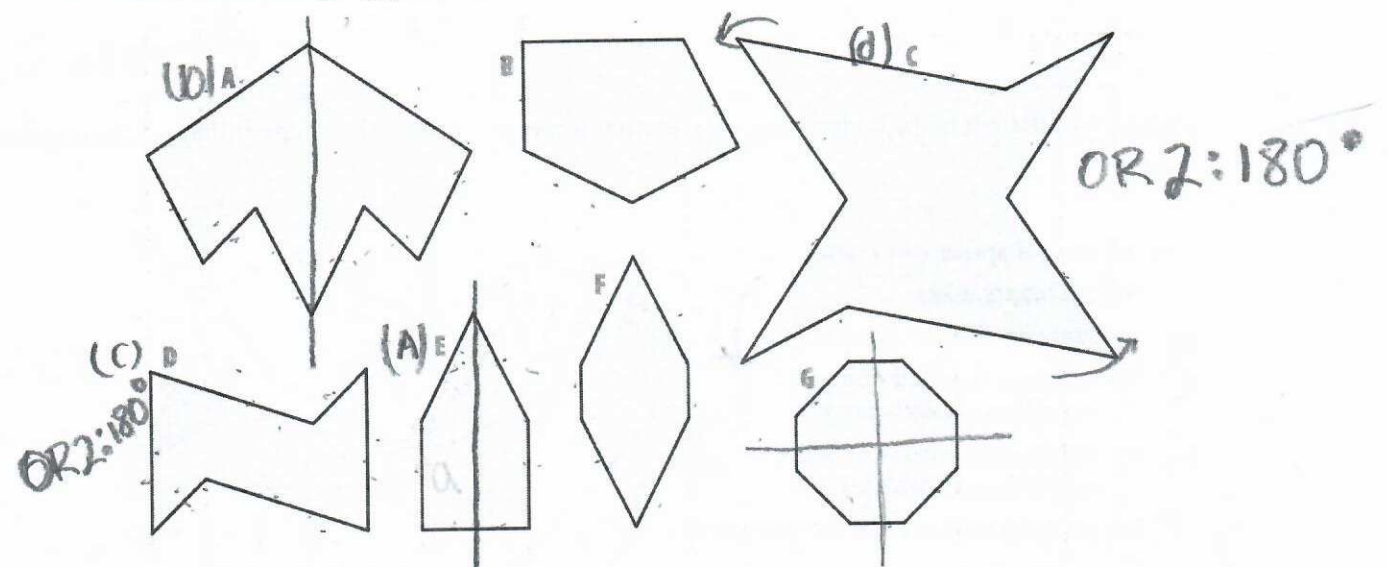C (d) an octagon with rotation symmetry but no reflection symmetry

#4 (3 pts) Draw and identify the duals of the Platonic solids represented by these two-dimensional projections:

Self-dualed
Tetrahedron

dualed w/
Octahedron

dualed w/
cube/hexahedron

Nice

#3 (2 pts) : To the left of each letter (e.g. (a)), write the correct letter of the shape satisfying the requirements:

E2 Here are some polygons.

Wl A.

(d) c

ORZ: 180°

(C) D

(A) E

ORZ:180°

a

F

G

Which of these polygons is

E (a) a pentagon with reflection symmetry   — pentagon - 5 sides

A (b) an octagon with reflection symmetry but no rotation symmetry   — 8 sides

D (c) a hexagon with rotation symmetry but no reflection symmetry   hexagon - 6 sides

C (d) an octagon with rotation symmetry but no reflection symmetry   octagon - 8 sides

✓

#4 (3 pts) Draw and identify the duals of the Platonic solids represented by these two-dimensional projections:
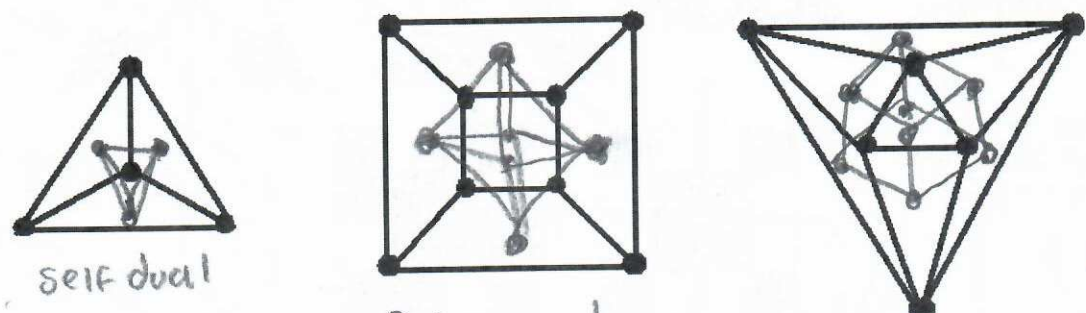
self dual

Cube and
Octrahedron

Cube and
Octrahedron
and Cube

✓

Nice!