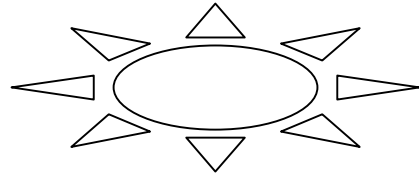


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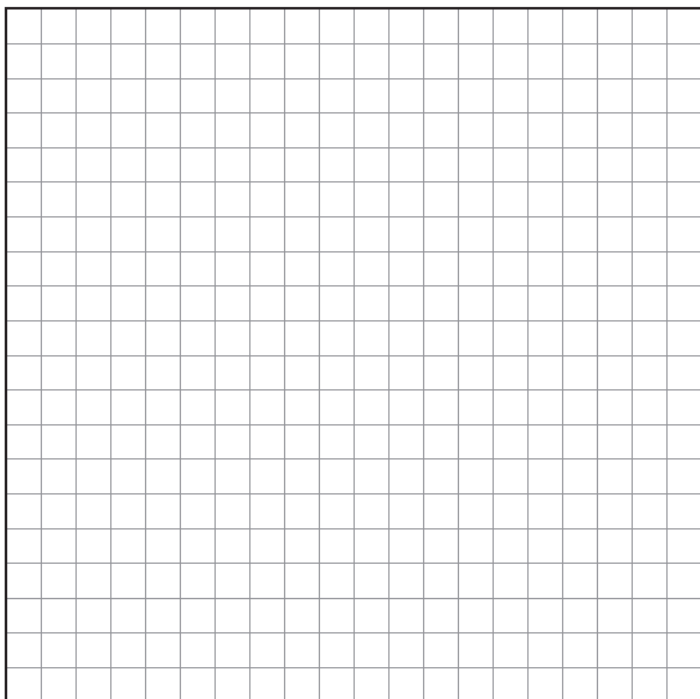
**MS5 Exam 5 Review Sheet**

**Exam 5 will be on Tuesday, January 9, 2007.** The exam will focus on the following topics: line reflections, point reflections, line symmetry, point symmetry, rotational symmetry, dilations, translations, rotations, and composition of transformations. Though the emphasis will be on these topics, you are still expected to know all of the concepts and skills taught since the beginning of the semester. Though not required, graphing calculators may be used on this exam, but the following are not permitted: TI-89, TI-92, or any calculator with symbolic manipulation abilities.

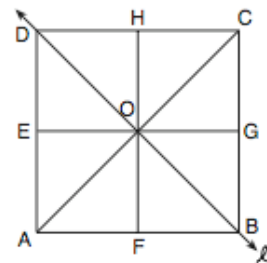
- What is the image of  $P(-4,6)$  under the composite  $r_{x=2} \circ r_{y\text{-axis}}$ ?  
 (1)  $(-8,6)$  (2)  $(4,-2)$  (3)  $(6,0)$  (4)  $(0,6)$
- Which transformation is a direct isometry?  
 (1)  $D_2$  (2)  $D_{-2}$  (3)  $r_{y\text{-axis}}$  (4)  $T_{2,5}$
- If the image of  $(-1,-9)$  under a certain translation is the point  $(1,7)$ , then what is the image of the point  $(-3,-2)$  under the same translation?
- In which quadrant would the image of point  $(-10,7)$  fall after a dilation using a factor of  $-3$ ?
- Which transformation does not preserve orientation?  
 (1) translation (2) dilation (3) reflection in the  $y$ -axis (4) rotation
- The composite transformation that reflects point  $P$  through the origin, the  $x$ -axis, and the line  $y = -x$ , in the order given, is equivalent to which rotation?  
 (1)  $R_{90^\circ}$  (2)  $R_{180^\circ}$  (3)  $R_{270^\circ}$  (4)  $R_{360^\circ}$
- Which of these transformations would alter the perimeter of a triangle?  
 (1)  $(x,y) \rightarrow (x+2,y-3)$   
 (2)  $(x,y) \rightarrow (4x,2y)$   
 (3)  $(x,y) \rightarrow (x,-y)$   
 (4)  $(x,y) \rightarrow (y,-x)$
- Determine whether the figure below has point symmetry, line symmetry, or neither. If the figure has line symmetry, draw all lines of symmetry.



- On the accompanying grid, graph and label  $\overline{AB}$ , where  $A$  is  $(0,5)$  and  $B$  is  $(2,0)$ . Under the transformation  $r_{x\text{-axis}} \circ r_{y\text{-axis}}(\overline{AB})$ ,  $A$  maps to  $A''$  and  $B$  maps to  $B''$ . Graph and label  $\overline{A''B''}$ . What single transformation would map  $\overline{AB}$  to  $\overline{A''B''}$ ?

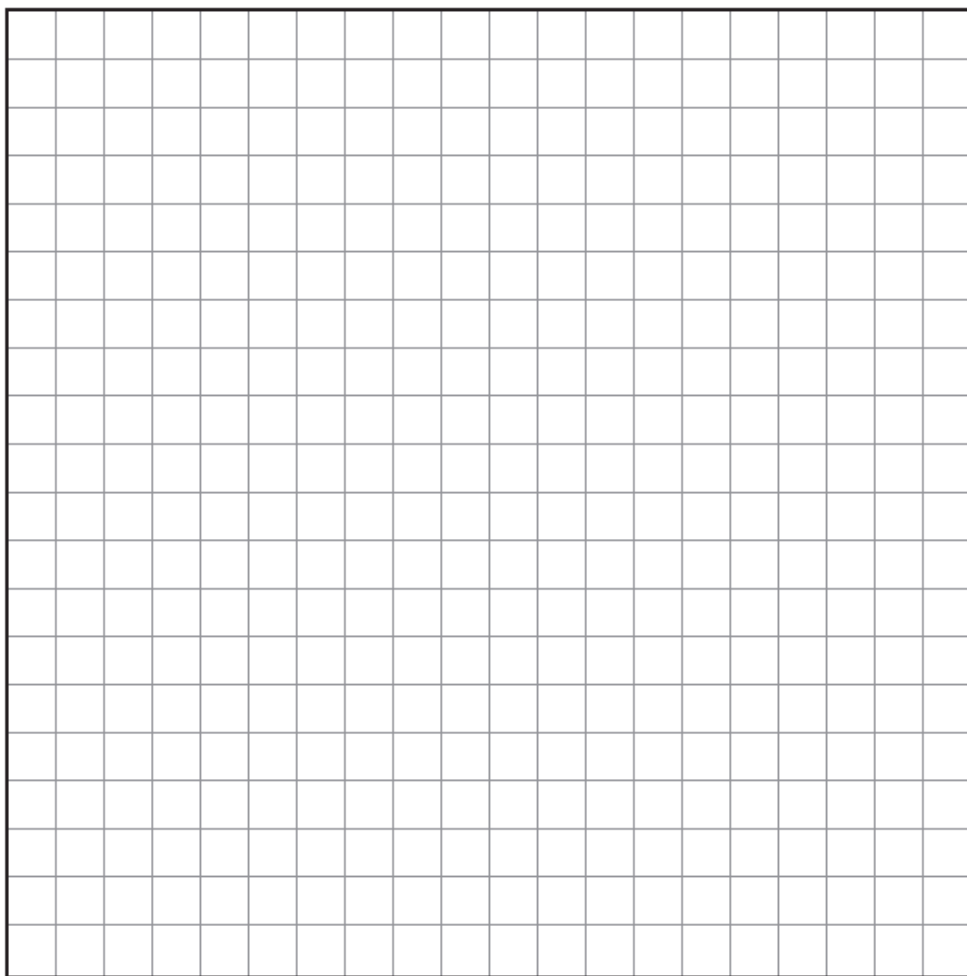


- In the accompanying diagram of square  $ABCD$ ,  $F$  is the midpoint of  $\overline{AB}$ ,  $G$  is the midpoint of  $\overline{BC}$ ,  $H$  is the midpoint of  $\overline{CD}$ , and  $E$  is the midpoint of  $\overline{DA}$ .



- Find the image of  $\triangle BOF$  after it is reflected in line  $l$ .
- Find the image of  $\triangle GCO$  after it is reflected in line  $l$ .
- Find the image of  $\overline{BF}$  after it is reflected in point  $O$ .

11. Triangle  $CMP$  has vertices  $C(1,2)$ ,  $M(5,7)$ , and  $P(8,4)$ .
- On the accompanying grid, draw and label  $\triangle CMP$ .
  - On the same set of axes, draw and label  $\triangle C'M'P'$ , the image of  $\triangle CMP$  after  $r_{y=-x}$ .
  - On the same set of axes, draw and label  $\triangle C''M''P''$ , the image of  $\triangle C'M'P'$  after a reflection in the origin.
  - What single transformation maps  $\triangle CMP$  onto  $\triangle C''M''P''$ ?



12. The graph of the function  $g(x)$  is shown on the accompanying set of axes. On the same set of axes, sketch the image of  $g(x)$  under the transformation  $D_2$ .

