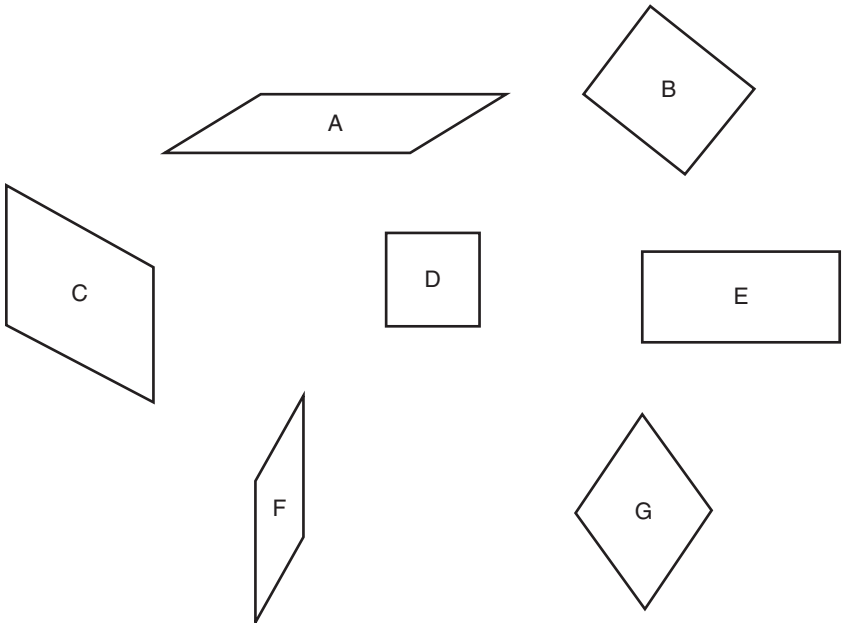
Name _____ Date _____

Extra Assessment Tasks: Geometric Shapes

PROBLEM 10

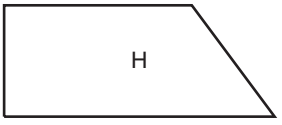
Drawing Machine 4 made these shapes. All shapes made by this drawing machine are alike in some way. Can you figure out what kind of shapes this drawing machine makes?

Shapes Made by Drawing Machine 4



How are these shapes alike? What's the rule?

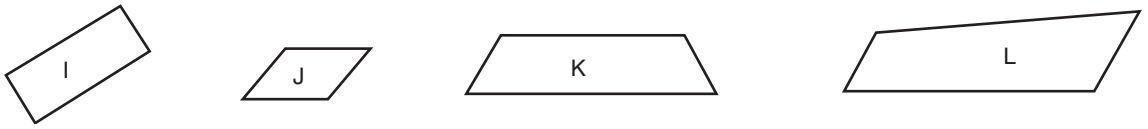
This shape *cannot* be made by Drawing Machine 4. Why?



Name _____ Date _____

Now what do you think the rule is for Drawing Machine 4?

Which of these shapes can be made by Drawing Machine 4? Why or why not?

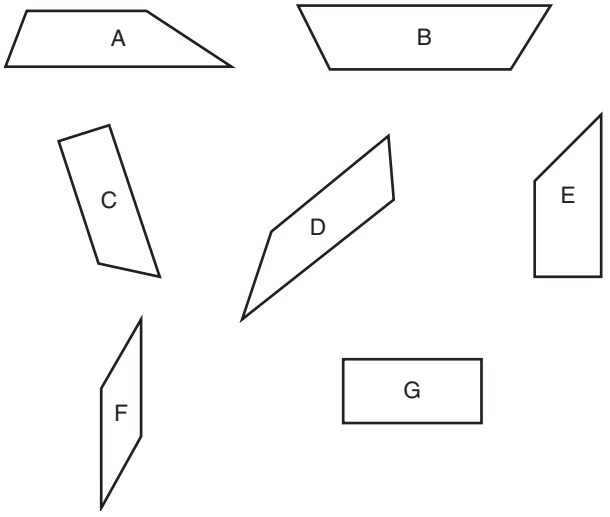


Name _____ Date _____

PROBLEM 11

Drawing Machine 5 made these shapes. All shapes made by this drawing machine are alike in some way. Can you figure out what kind of shapes this drawing machine makes?

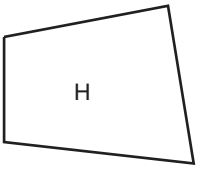
Shapes Made by Drawing Machine 5



How are these shapes alike?

What's the rule?

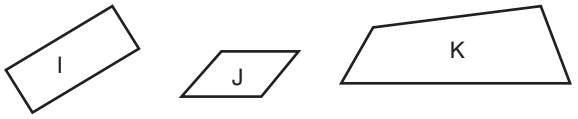
This shape *cannot* be made by Drawing Machine 5. Why?



Name _____ Date _____

Now what do you think the rule is for Drawing Machine 5?

Which of these shapes *can* be made by Drawing Machine 5? Why or why not?

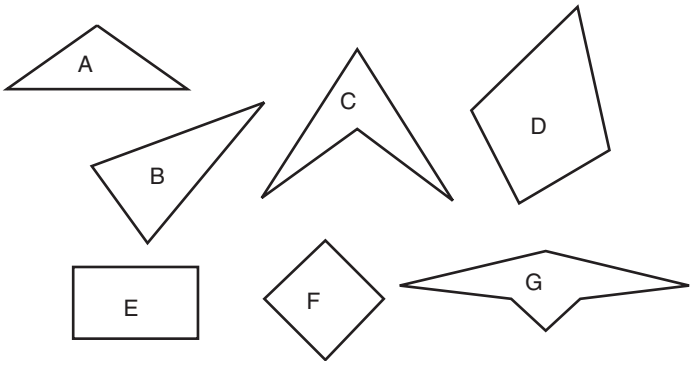


Name _____ Date _____

PROBLEM 12

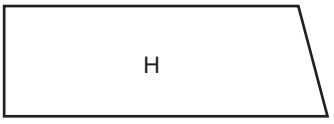
Drawing Machine 6 made these shapes. All shapes made by this drawing machine are alike in some way. Can you figure out what kind of shapes this drawing machine makes?

Shapes Made by Drawing Machine 6



How are these shapes alike? What's the rule?

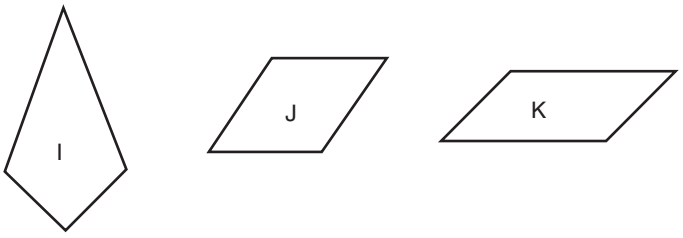
This shape *cannot* be made by Drawing Machine 6. Why?



Now what do you think the rule is for Drawing Machine 6?

Name _____ Date _____

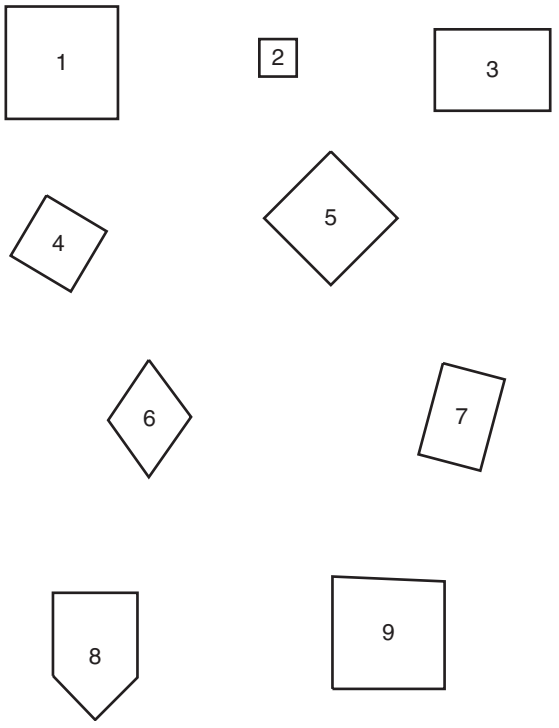
Which of these shapes *can* be made by Drawing Machine 6? Why or why not?



Name _____ Date _____

PROBLEM 13

Circle each square.



1. Why did you say that Shape X is a square?
[Ask for all shapes that student says are squares.]

2. Why did you say that Shape X is not a square?
[Ask for all shapes that student says are not squares.]

Name _____ Date _____

PROBLEM 14

John claims that if a figure has 4 equal sides, it is a square. Which figure might be used to prove John is wrong? Explain your answer.

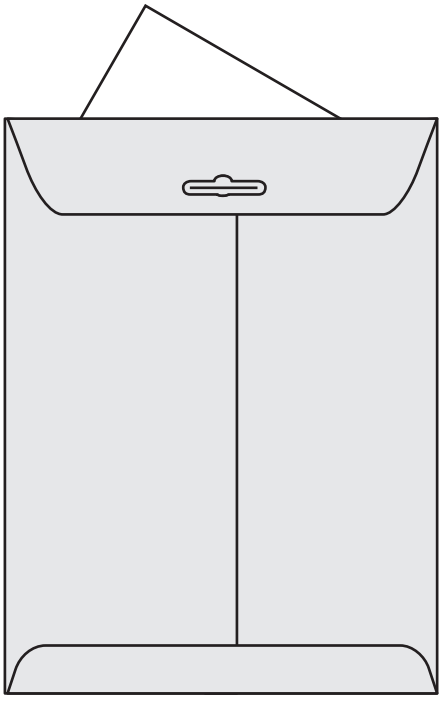
A B C D E

Name _____ Date _____

PROBLEM 15

Part of a shape is hidden behind an envelope.

The shape is closed and has 4 straight sides. The sides across from each other are equal.



Describe everything you know about this shape.

For each thing you say about the shape, explain how you know you are correct.

Name _____ Date _____

PROBLEM 16

I'm thinking of a closed figure with 4 straight sides.

It has 2 long sides and 2 short sides.

The 2 long sides are the same length.

The 2 short sides are the same length.

What shape could I be thinking of?

Could it be a triangle?	Yes	No
Could it be a square?	Yes	No
Could it be a rectangle?	Yes	No
Could it be a parallelogram?	Yes	No
Could it be a kite?	Yes	No

Name _____ Date _____

PROBLEM 17

Five teams are involved in a geometry competition, and you are the judge for one of the problems. Each team is told that a mystery figure has 4 straight sides and is closed. The winner is the team that gives the smallest number of extra clues that will guarantee that the mystery figure is a rectangle. Here are the clues that each team gave.

Team A

(1) 2 long sides and 2 short sides

Team B

(1) 2 long sides and 2 short sides

(2) 4 right (90°) angles

Team C

(1) 4 right (90°) angles

Team D

(1) both pairs of opposite sides parallel

(2) at least 1 right (90°) angle

Team E

(1) both pairs of opposite sides equal

(2) at least 1 right (90°) angle

Which team's answer is best? Why?

Name _____ Date _____

PROBLEM 18

True or False: If all the angles in a polygon are equal, then all the sides in the polygon are equal.

Name _____ Date _____

PROBLEM 19

How do you know if a shape is a parallelogram?

Name _____ Date _____

PROBLEM 20

Do the clues below guarantee that a quadrilateral is a rectangle?

(1) both pairs of opposite sides parallel

(2) at least 1 right (90°) angle

Name _____ Date _____

PROBLEM 21

True or False? If a quadrilateral has 4 right angles, then the opposite sides of the quadrilateral must be parallel. Prove your answer or tell why your answer is correct.

Name _____ Date _____

PROBLEM 22

True or False? If a quadrilateral has 4 right angles, then the opposite sides of the quadrilateral must be parallel. Prove your answer or tell why your answer is correct.

Name _____ Date _____

PROBLEM 23

Which is the best way to define a kite, by saying it is a quadrilateral with "at least 1 line of symmetry angle to angle" or a quadrilateral with "at least 2 sets of adjacent sides congruent"?

Name _____ Date _____

PROBLEM 24

Evaluate the following definition: "A square is a quadrilateral with four congruent sides and at least one right angle." Does this definition give enough information to guarantee that a shape is a square?

Name _____ Date _____

PROBLEM 25

Give a definition for a rectangle that does not list all of its properties.

Name _____ Date _____

PROBLEM 26

Prove that the diagonals of a rectangle are congruent.