Geometry
Unit 2: Transformations
2.1 Rigid Motion & Congruent Corresponding Parts

Mathematician: _____

Period:_____

LEVEL: EMERGING

Directions: Identify the type of transformation: *translation, reflection, or rotation*. Then, **explain** your reasoning.

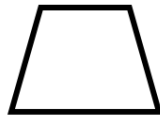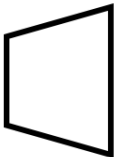| 1.	2.	3.
Transformation:	Transformation:	Transformation:
Reasoning:	Reasoning:	Reasoning:

4) Which of the following transformations of the original image represent an example of rigid motion?
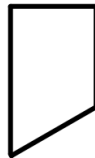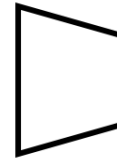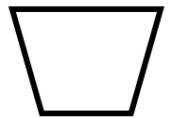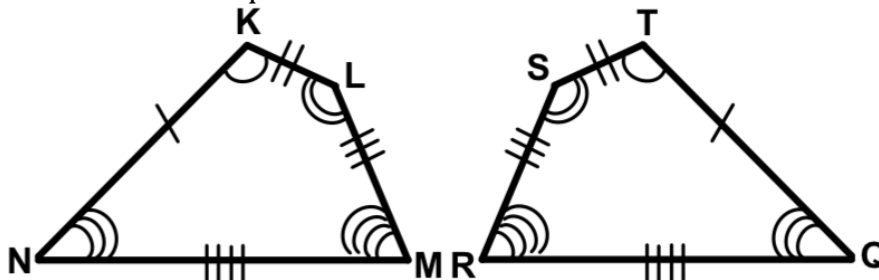
Original Image:

a)	b)	c)	d)	e)

LEVEL: PROFICIENT

5) Use the diagram to answer the questions:

| a) What angle is congruent to ∠N?	b) What angle is congruent to ∠T?
c) Which line segment is congruent to $\overline{LM}$?	d) Which line segment is congruent to $\overline{TQ}$?
e) If the measure of ∠N = 36°, what angle is also 36°?	f) If the length of $\overline{NM}$ is 8 centimeters, what line segment is also 8 centimeters?

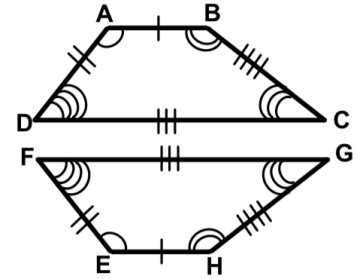Directions: Answer the following questions. Select **ALL** that apply!

6) How would the congruent quadrilaterals be described?

(a) $DABC \cong EFHG$
(b) $ABCD \cong EGFH$
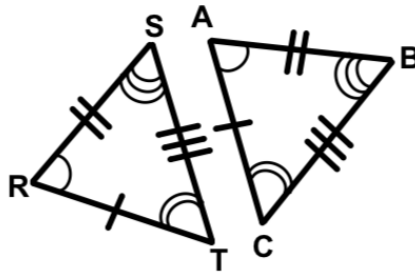(c) $CDAB \cong EGHF$
(d) $DABC \cong HFGE$
(e) $DCBA \cong HFGE$
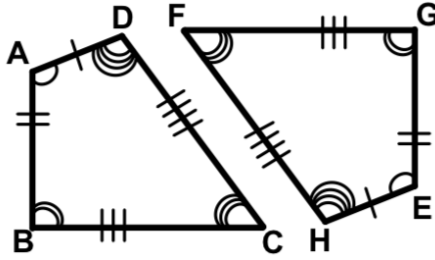
7) How would the congruent quadrilaterals be described?

(a) $CDAB \cong GFHE$
(b) $ABCD \cong EGFH$
(c) $ABCD \cong EHGF$
(d) $BCDA \cong HGFE$
(e) $DABC \cong FGHE$

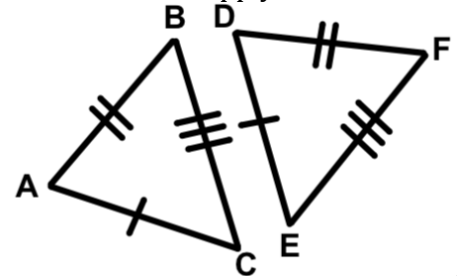8) Select all of the congruent pairs of sides.

(a) $\overline{SR}$ and $\overline{BA}$
(b) $\overline{CB}$ and $\overline{TS}$
(c) $\overline{ST}$ and $\overline{BC}$
(d) $\overline{TR}$ and $\overline{AB}$
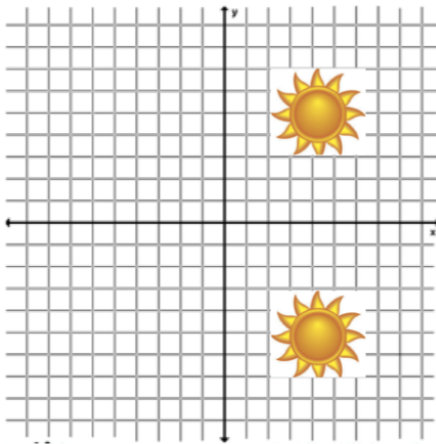(e) $\overline{ST}$ and $\overline{AB}$

9) The triangles below are congruent. Which pairs of angles are congruent? Select all that apply.

(a) $\angle A$ and $\angle D$
(b) $\angle C$ and $\angle F$
(c) $\angle F$ and $\angle B$
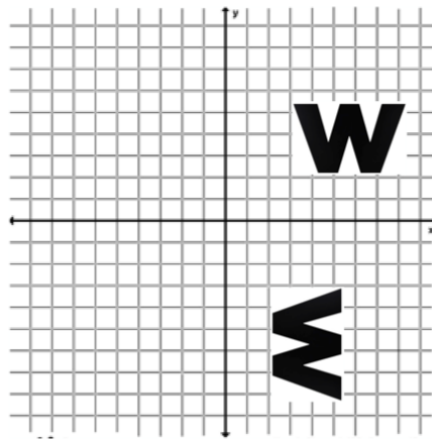(d) $\angle B$ and $\angle E$
(e) $\angle B$ and $\angle D$

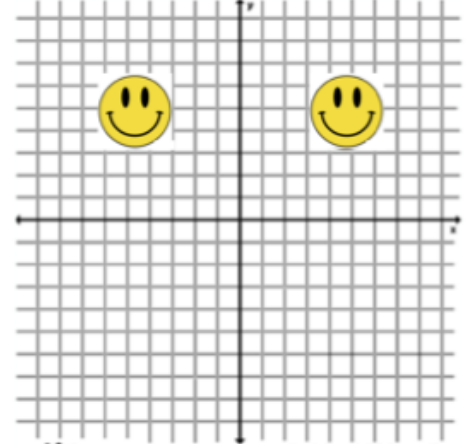Directions: Identify the type(s) of rigid motion that relates the two given objects.

10)

11)

12)

LEVEL: MASTERY

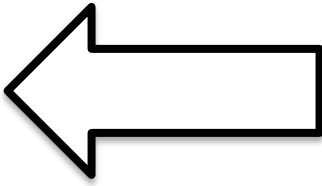13) **In your own words**, describe what a "rigid motion" is.

14) What does "congruent" mean when describing shapes?

15) Give three examples of **rotation** in real life.

16) Give three examples of **translation** in real life.

Directions: List three shapes that are non-examples of rigid motion given shapes in each question.
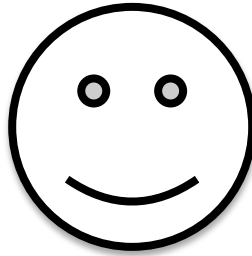
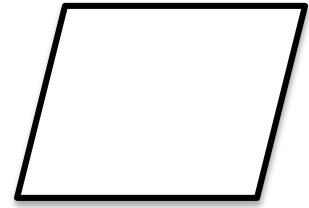| 17)	18)	19)
Non-Example #1:	Non-Example #1:	Non-Example #1:
Non-Example #2:	Non-Example #2:	Non-Example #2:
Non-Example #3:	Non-Example #3:	Non-Example #3:

20) Given the following diagram, find $m\angle B$.

$(10x + 120)°$ B

$(3x + 55)°$ C

A

$(7x + 45)°$

$(37 - 6x)°$ K   L

J
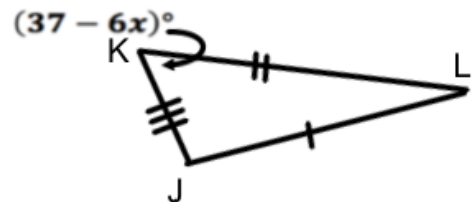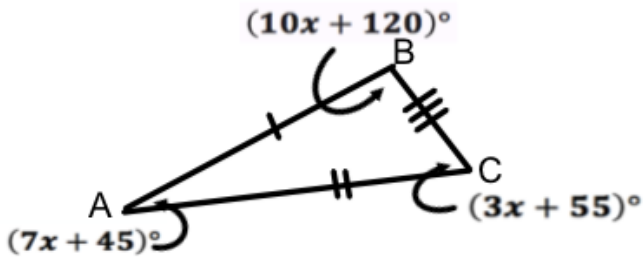
$m\angle B =$ _____

Unit 2.1 Worksheet Answers

1. Reflection, Answers may vary
2. Rotation, Answers may vary
3. Translation, Answers may vary
4. A, D, E
5.
    a. $\angle Q$
    b. $\angle K$
    c. $\overline{SR}$
    d. $\overline{KN}$
    e. $\angle Q$
    f. $\overline{QR}$
6. B and E

7. C and D
8. A, B, and C
9. A and C
10. Translation or Reflection over the x-axis
11. Rotation, Reflection over the x-axis
12. Translation or Reflection over the y-axis
13. Answers may vary
14. Answers may vary
15. Answers may vary
16. Answers may vary
17. Answers may vary
18. Answers may vary
19. Answers may vary
20. 100°