Unit 9 Review Sheet (Quadrilaterals)

Fill in the following special properties for each quadrilateral:

1. Properties of a Parallelogram:
   -
   -
   -
   -
   -

2. Properties of a Rectangle:
   - Has all the properties of a
   -
   -

3. Properties of a Rhombus:
   - Has all the properties of a
   -
   -
   -

4. Properties of a Square:
   - Has all the properties of a
   -
   -
   -

5. Properties of a Trapezoid:
   -
   -

6. Properties of an Isosceles Trapezoid:
   - Has all the properties of a
   -
   -
   -

7. Ways to prove a quadrilateral is a Parallelogram:
-
-
-
-

8. Ways to prove a quadrilateral is a Rectangle:
-
-
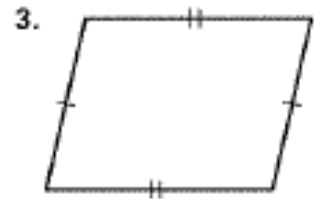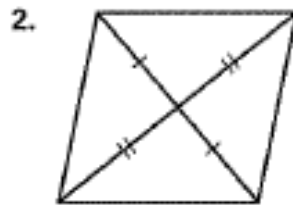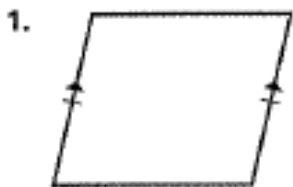-

9. Ways to prove a quadrilateral is a Rhombus:
-
-
-
-

10. Ways to prove a quadrilateral is a Square:
-
-

Practice Problems:

Are you given enough information to determine whether the quadrilateral is a parallelogram? Explain.
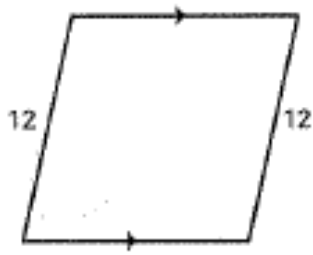

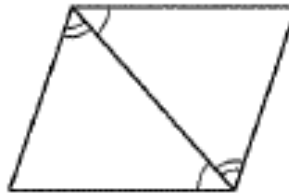Yes/No because _____   Yes/No because _____   Yes/No because _____
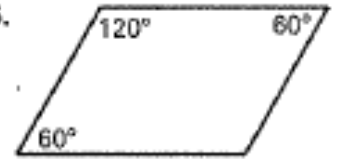
_____   _____   _____

_____   _____   _____

4.

12   **12**

5.

6. 120°   60°
60°

Yes/No because _____
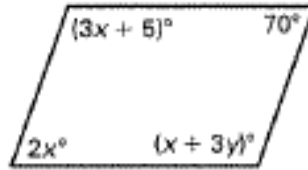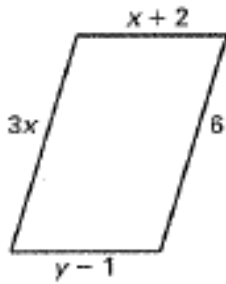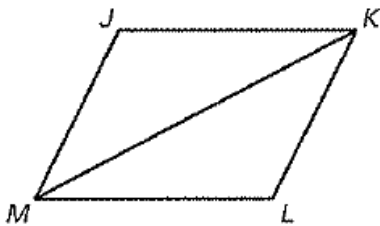
Yes/No because _____

Yes/No because _____

_____

_____

_____

_____

_____

_____

7.

What value of x and y will make the polygon a parallelogram?

$x + 2$

$3x$ 6

$y - 1$

$(3x + 5)°$ $70°$

$2x°$ $(x + 3y)°$

$x + y$

12

$3x$ $5y$
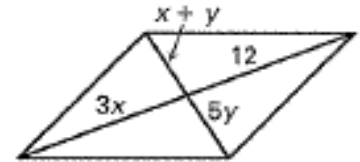
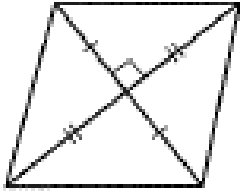**8.**

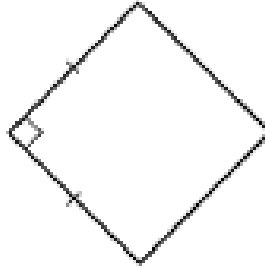**Given:** $\triangle MJK \cong \triangle KLM$

Prove: $MJKL$ is a parallelogram.

J   K

M   L
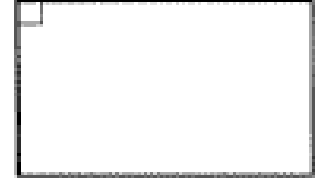
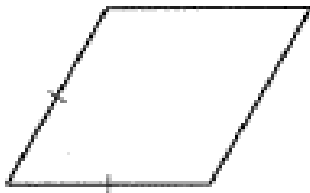Each figure is a parallelogram. Identify the special type and explain your reasoning.
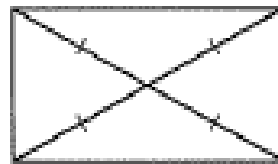
It's a _____ because

_____

_____

It's a _____ because
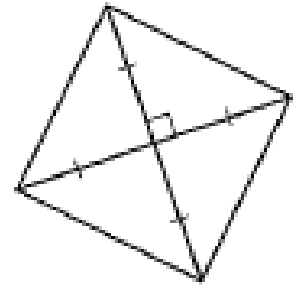
_____

_____

It's a _____ because

_____

_____

It's a _____ because

_____

_____

It's a _____ because

_____

_____

It's a _____ because

_____

_____

Find the value of x.

MNOP is a square.

M _____ N

$3x + 14$

P _____ $5x - 8$ _____ O

DEFG is a rhombus.

D _____ E

$(7x - 28)°$

G _____ $(10x - 13)°$ _____ F
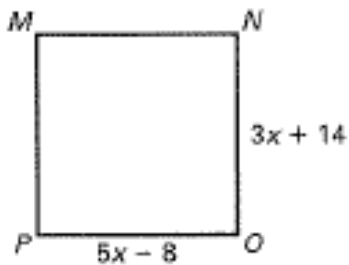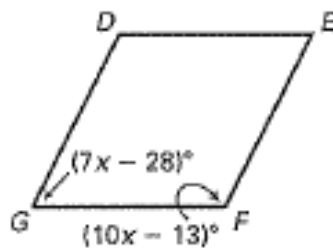
WXYZ is a rectangle.

W _____ X

$7x + 4$ $3(x + 8)$

Z _____ Y
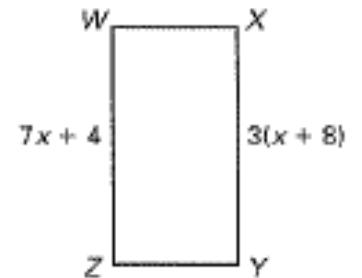
8. MNPQ is a rhombus. Find the measure of each angle.

M   N
    2
  4
   3
        1
    35°
Q   P
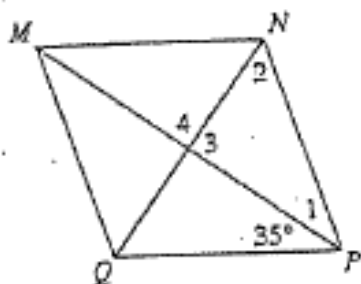
m∠1 _____   m∠NMQ _____

m∠MNP _____   m∠2 _____

m∠3 _____   m∠4 _____
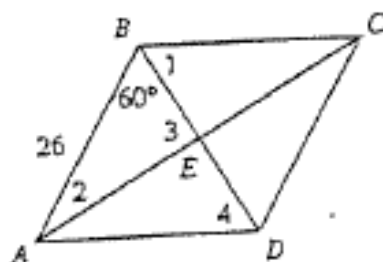
9. GHJK is a rhombus, with GJ = 42. Find the length of each segment.

G   H
   58
      40 L
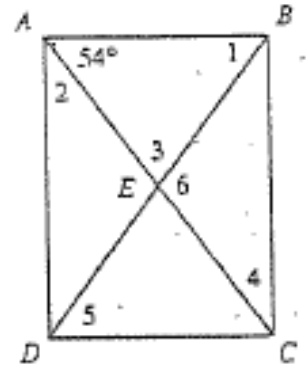K   J
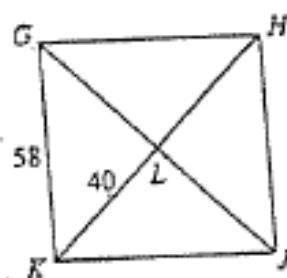
GH _____   HJ _____

LJ _____   LH _____

KH _____

10. ABCD is a rhombus. Find each angle measure or segment length.

m∠1 _____   m∠DAB _____

m∠2 _____   m∠3 _____

m∠4 _____   AD _____

BD _____   ED _____

B   C
   1
 60°
    3
26   E
 2
    4
A   D

ABCD is a rectangle, with *AC* = 18. Find each length or angle measure.

11. *m∠BCD* _____   12. *m∠1* _____   13. *m∠2* _____

14. *m∠3* _____   15. *m∠4* _____   16. *m∠5* _____
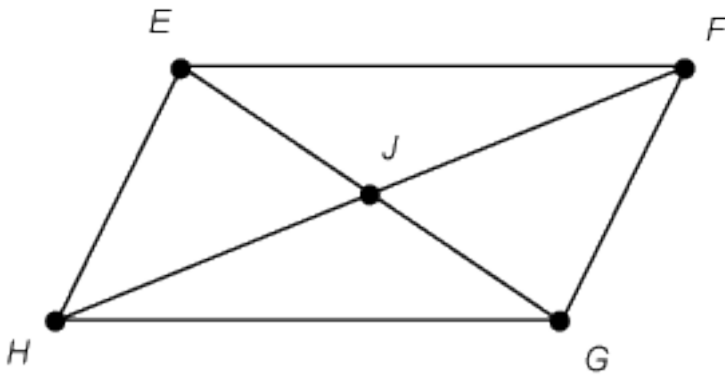
17. *m∠6* _____   18. *AE* _____   19. *DB* _____

GHKL is a rectangle (not a square). Answer with true or false

20. *GHKL* and its diagonals form four congruent triangles. _____

21. *GHKL* and its diagonals form four isosceles triangles. _____

22. *∠1 ≅ ∠2* _____

23. *△GHL ≅ △KLH* _____

24. $\overline{GK}$ is a line of symmetry. _____

25. *△GML ≅ △HMK* _____

26. $\overline{GK} ≅ \overline{HL}$ _____
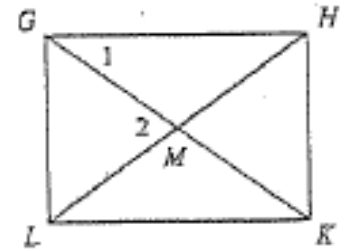
27. Fill in the following chart given the following information about the below parallelogram. EF = 9, m∡EFG = 70, JF = 7.

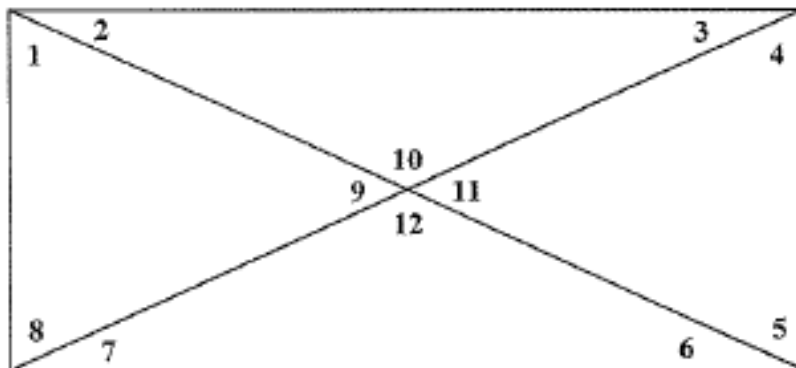| Measure	Explanation
m∡EHG = ____	
HG = ____	
m∡FGH = ____	
JH = ____	

Fill in all the numbered angles with the appropriate angle measures.
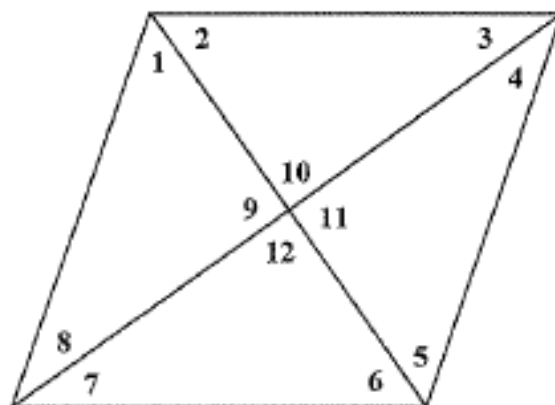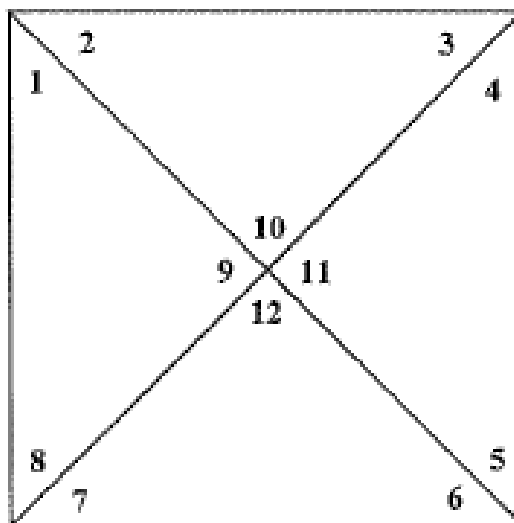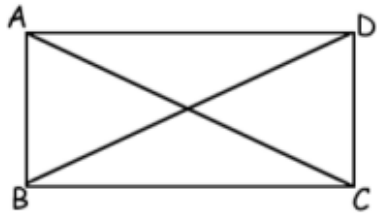
RECTANGLE...

$m\angle 1 = 70°$

RHOMBUS...

$m\angle 1 = 40°$

SQUARE...

28.

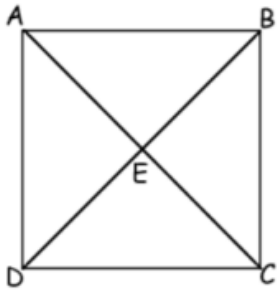Given: Parallelogram ABCD

$\triangle ABC \equiv \triangle DCB$

Prove: ABCD is a rectangle

29.

Given: AE ≡ EC, ED ≡ EB
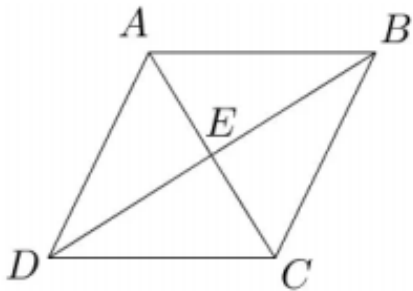
AB ⊥ BC, AB ≡ BC
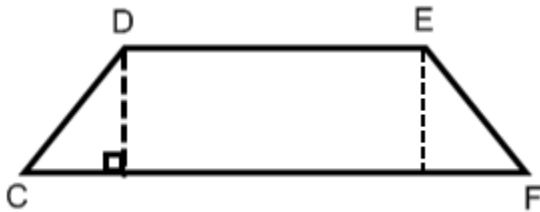
Prove: ABCD is a square

30. Given: Rhombus ABCD with diagonals meeting at E

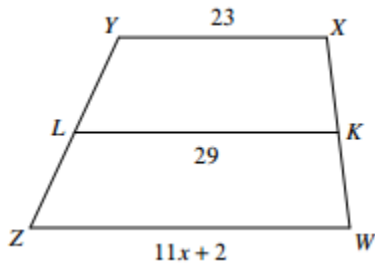Prove: $\triangle AEB \cong \triangle CEB$
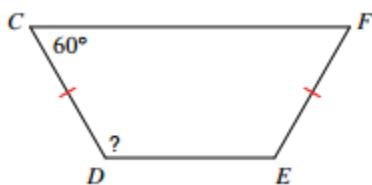
Trapezoid Practice!

1. In Trapezoid CDEF below, the measure of base DE = 12 and the measure of base CF = 24. If the trapezoid has an altitude of 8, what is the measure of CD? Hint: you are going to need to use the Pythagorean Theorem.

2. Solve for x:

3. What is the missing angle measure? What is the measure of Angle E?

4. If the measure of Angle ABD = 75 and the measure of Angle CBD = 40, what is the measure of the following:
      - Angle A?
      - Angle CDB?