

Classify each statement as always, sometimes or never true.

1. Opposite sides of a rhombus are parallel. \_\_\_\_\_
2. Diagonals of a parallelogram are equal. \_\_\_\_\_
3. Diagonals of a rectangle are perpendicular. \_\_\_\_\_
4. Diagonals of a square bisect opposite angles. \_\_\_\_\_
5. Opposite sides of a rectangle are equal. \_\_\_\_\_
6. All angles of a rhombus are right angles. \_\_\_\_\_
7. Diagonals of a rhombus are equal. \_\_\_\_\_
8. Opposite angles of a rectangle are equal. \_\_\_\_\_
9. A diagonal of a square forms two congruent triangles. \_\_\_\_\_
10. Diagonals of a parallelogram bisect each other. \_\_\_\_\_
11. Diagonals of a parallelogram do not intersect. \_\_\_\_\_

Classify each statement as true or false.

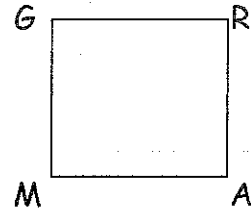
1. Opposite sides of a rectangle must be parallel. \_\_\_\_\_
2. The diagonals of a rhombus must be perpendicular. \_\_\_\_\_
3. Consecutive angles of a rhombus are always complementary. \_\_\_\_\_
4. The diagonals of a rectangle are always perpendicular. \_\_\_\_\_
5. Opposite sides of a parallelogram must be congruent. \_\_\_\_\_
6. Each diagonal of a rectangle always bisects a pair of opposite angles. \_\_\_\_\_

In 7-9, GRAM is a parallelogram.

7. If  $m\angle G = 90$ , then GRAM is a \_\_\_\_\_

8. If  $\overline{MA} \cong \overline{AR}$ , then GRAM is a \_\_\_\_\_

9. If  $\overline{GM} \perp \overline{GR}$  and  $\overline{GM} \cong \overline{GR}$ , then GRAM is a \_\_\_\_\_



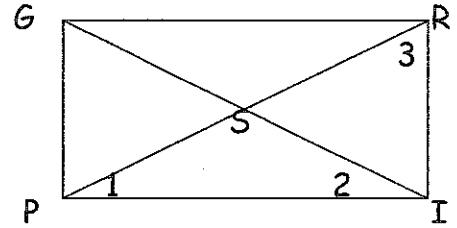
In 10-13, GRIP is a rectangle.

10. If  $m\angle 1 = 20$ , then  $m\angle 2 =$  \_\_\_\_\_

11. If  $GI = 15.2$ , then  $RS =$  \_\_\_\_\_

12. If  $PS = 6x - 4$  and  $GI = 28$ , then  $x =$  \_\_\_\_\_

13. If  $m\angle 1 = 5t$  and  $m\angle 3 = 8t - 1$ , then  $t =$  \_\_\_\_\_



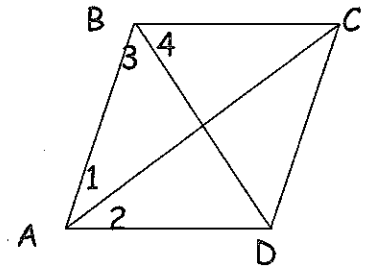
In 14-17, ABCD is a rhombus.

14. If  $AB = 7.5$ , then  $BC =$  \_\_\_\_\_

15. Name all angles congruent to Angle 1. \_\_\_\_\_

16. If  $m\angle 1 = 40$ , then  $m\angle 3 =$  \_\_\_\_\_

17. If  $m\angle 3 = 6x + 16$  and  $m\angle 4 = 8x$ , then  $x =$  \_\_\_\_\_

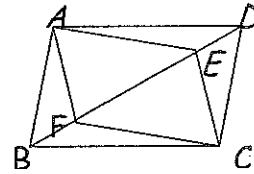


18. Use Coordinate Geometry to prove WXYZ is a rectangle.

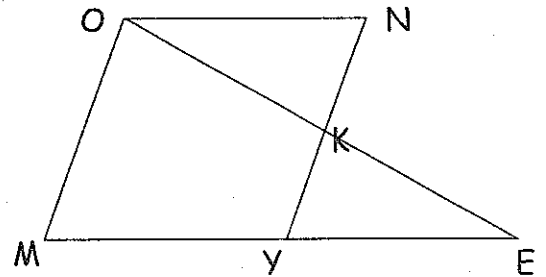
$W(0,5)$ ,  $X(3,5)$ ,  $Y(3,1)$ ,  $Z(0,1)$

Proofs:

1. Given: Parallelogram  $ABCD$ ;  $\overline{DE} \cong \overline{BF}$   
Prove:  $AFCE$  is a parallelogram

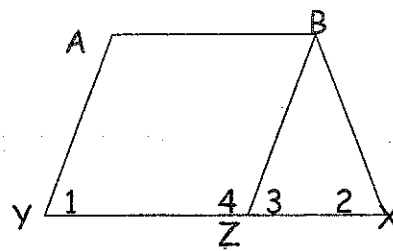


2. Given:  $K$  is the midpoint of  $\overline{OE}$  and  $\overline{NY}$   
 $Y$  is the midpoint of  $\overline{ME}$   
Prove:  $MONY$  is a parallelogram



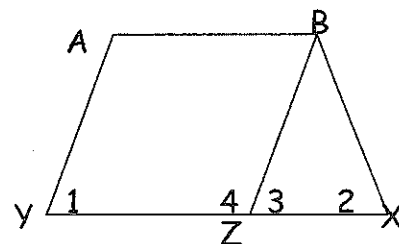
3. Given:  $ABZY$  is a parallelogram,  $\overline{ZY} \cong \overline{BX}$ ,  $\angle 1 \cong \angle 2$

Prove:  $ABZY$  is a Rhombus



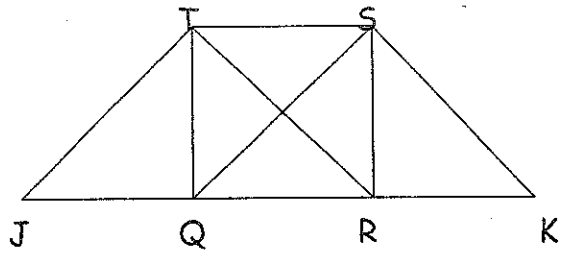
4. Given:  $\square ABZY$ ,  $\overline{AY} \cong \overline{BX}$

Prove:  $\angle 1 \cong \angle 2$  and  $\angle 1 \cong \angle 3$



5. Given: Rectangle  $QRST$ ,  $\square RKST$

Prove:  $\triangle QSK$  is isosceles



6. Given: Rectangle  $QRST$ ,  $\square RKST$ ,  $\square JQST$

Prove:  $\overline{JT} \cong \overline{KS}$

