Name: _____ Date: _____ Row: _____ Period: _____ Assn #: _____

Practice 18
Parallelograms

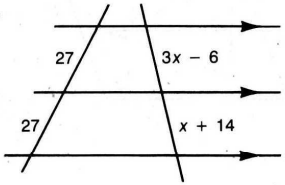
Exercises 1–7 refer to the diagram. *HOPE* is a parallelogram. Find the indicated lengths or angle measures.

1. If $HO = 14$, then $EP =$ _____.
2. If $HS = 5$, then $SP =$ _____.
3. If $m\angle HEP = 120$, then $m\angle HOP =$ _____.
4. If $m\angle 3 = 20$ and $m\angle 4 = 40$, then $m\angle 2 =$ _____.

In Exercises 5–9, find the value of x.

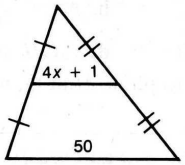
5. If $HE = 17 - 5x$ and $OP = 3x - 7$, then $x =$ _____.
6. If $ES = 2x + 6$ and $EO = 40$, then $x =$ _____.
7. If $m\angle EHO + m\angle EPO = 150$ and $m\angle HOP = x$, then $x =$ _____.

8.



$x =$ _____

9.



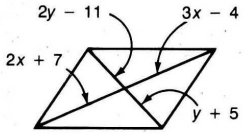
$x =$ _____

Classify each statement as *always*, *sometimes*, or *never* true.

10. The diagonals of a parallelogram bisect each other. _____
11. A quadrilateral with two pairs of opposite sides congruent is a parallelogram. _____
12. A quadrilateral with one pair of opposite sides congruent and one pair parallel is a parallelogram. _____
13. A quadrilateral with diagonals that do not bisect each other is a parallelogram. _____

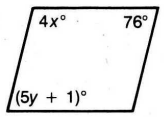
What values must x and y have to make the quadrilateral a parallelogram?

14.



$x =$ _____ $y =$ _____

15.



$x =$ _____ $y =$ _____

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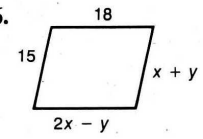
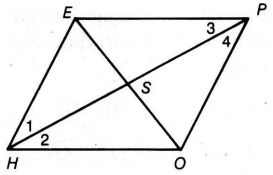


$x =$ _____ $y =$ _____

1)



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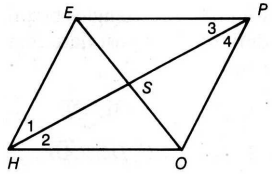

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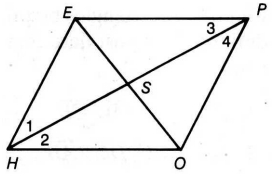

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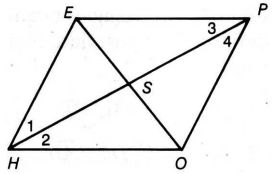

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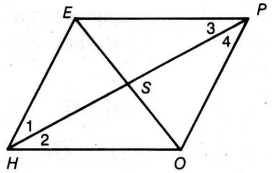

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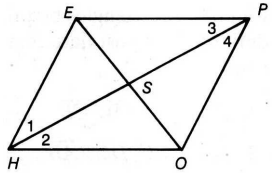

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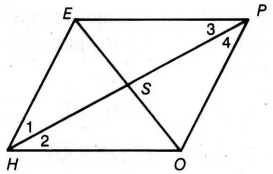

8)

9)

14)

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16)

Special Parallelograms

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 Exercises 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 Exercises 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 = _____.

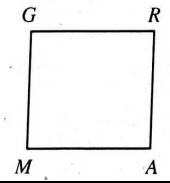
In Exercises 14–17 *ABCD* is a rhombus.

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 = _____.

In $\triangle WYX$, $\angle WXY$ is a right angle and $\overline{XZ}$ is a median.

18. If $YZ = 8\frac{1}{4}$, XZ = _____.
19. If $XZ = 12.5$, WY = _____.
20. If $m\angle 1 = 30$, then $m\angle 2$ = _____ and $m\angle 3$ = _____.

7)



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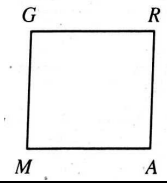

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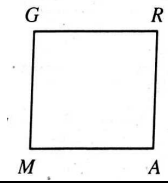

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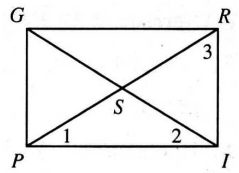

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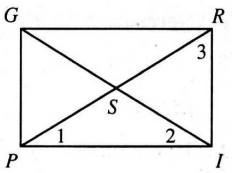

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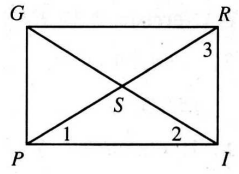

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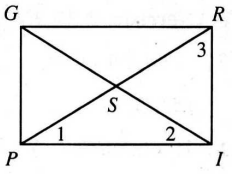

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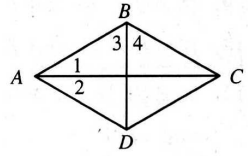

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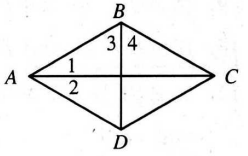

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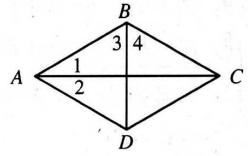

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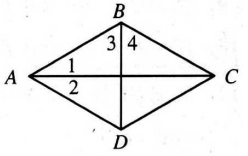

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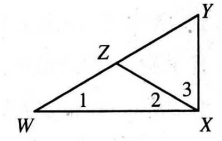

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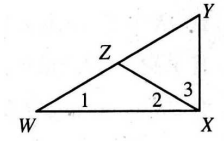

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