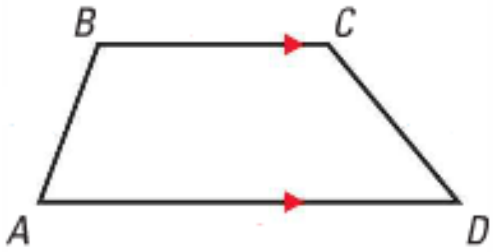
Geometry
Notes – 8.4

Name_____

Trapezoids



trapezoid – quadrilateral with exactly one pair of opposite sides parallel

bases – the parallel sides

legs – nonparallel sides

isosceles trapezoid – when the legs are congruent

about an isosceles trapezoid…
(properties of an isosceles trapezoid)
- if a trapezoid is isosceles, then each pair of base angles is congruent.

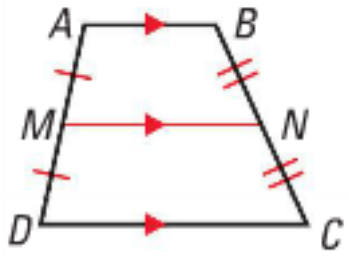
- if a trapezoid has a pair of congruent base angles, then it is an isosceles trapezoid.

- a trapezoid is isosceles if and only if its diagonals are congruent.

midsegment – segment that connects the midpoints of the legs

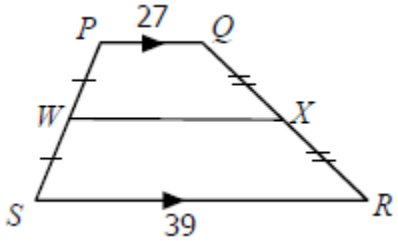
about a midsegment…
- parallel to each base

- half the sum of the lengths of the bases

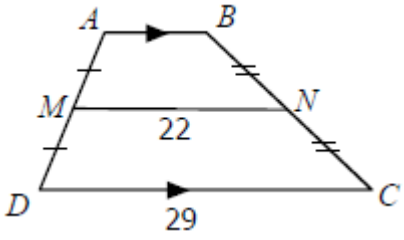


Examples 1 – 2: Find the indicated value.

1. Find WX.

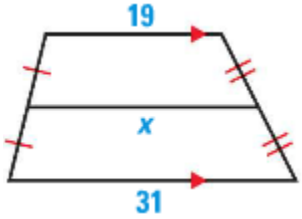


2. Find AB.

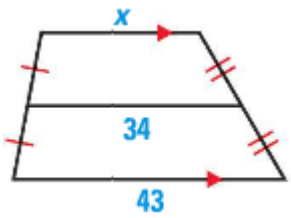


Practice 3 – 4: Find the value of x.

3.

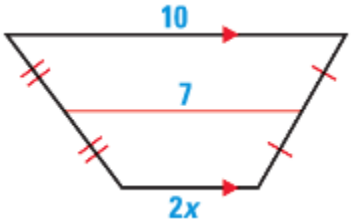


4.

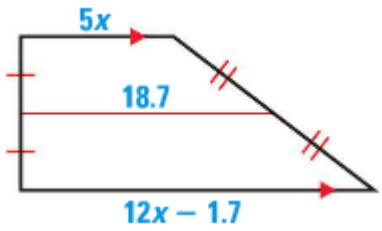


Examples 5 – 6: Find the value of x.

5.

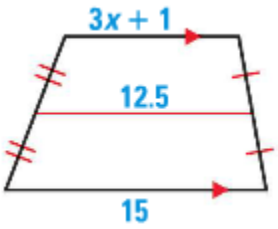


6.

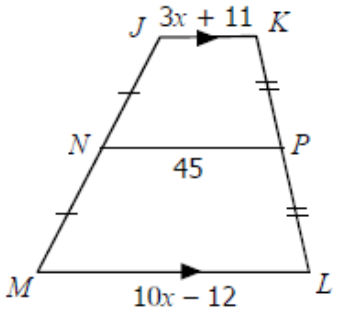


Practice 7 – 8: Find the value of x.

7.

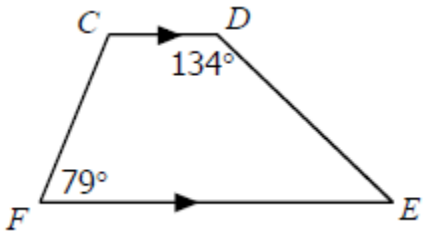


8. N and P are midpoints



Examples 9 – 10: Given each trapezoid, find the indicated value.

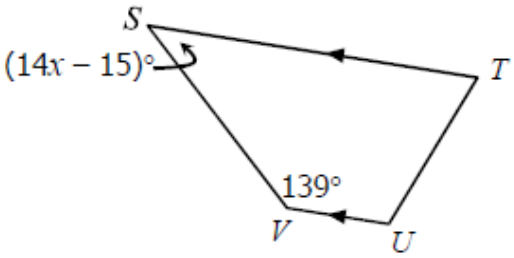
9.



$m\angle C =$ _____

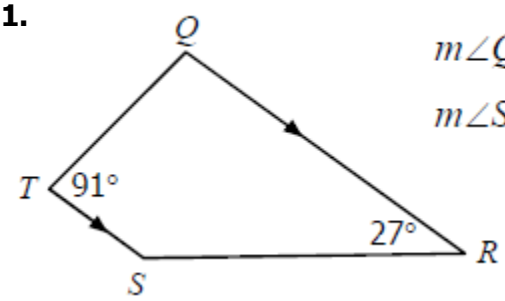
$m\angle E =$ _____

10. Find the value of x.



Practice 11 – 12: Given each trapezoid, find the indicated value.

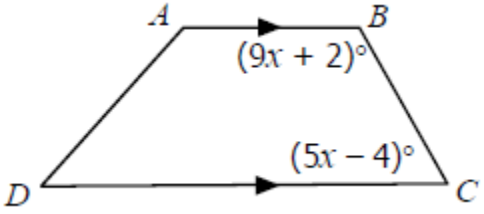
11.



$m\angle Q =$ _____

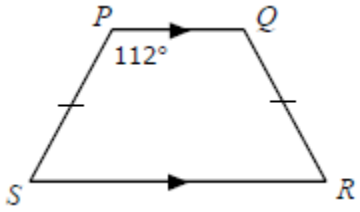
$m\angle S =$ _____

12. Find the value of x.



Examples 13 – 14: Find the missing measures.

13.

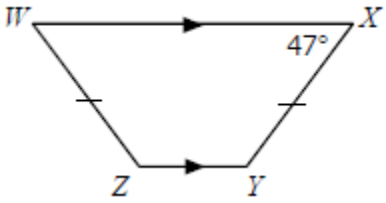


$m\angle Q =$ _____

$m\angle R =$ _____

$m\angle S =$ _____

14.



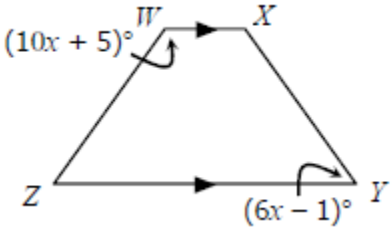
$m\angle W =$ _____

$m\angle Y =$ _____

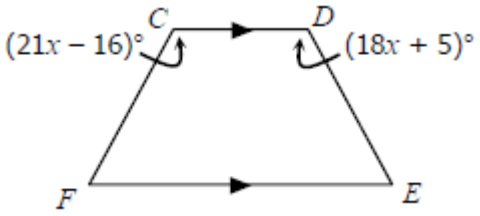
$m\angle Z =$ _____

Examples 15 – 16: Given the isosceles trapezoid, find the value of x.

15.

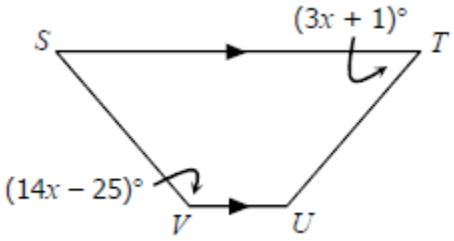


16.

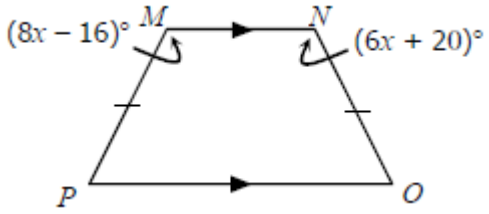


Practice 17 – 18: Given the isosceles trapezoid, find the value of x.

17.



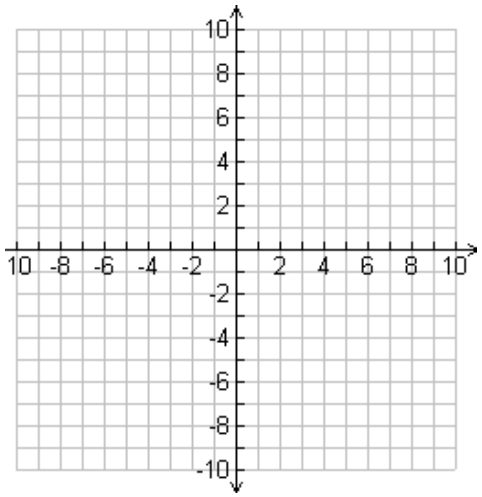
18.



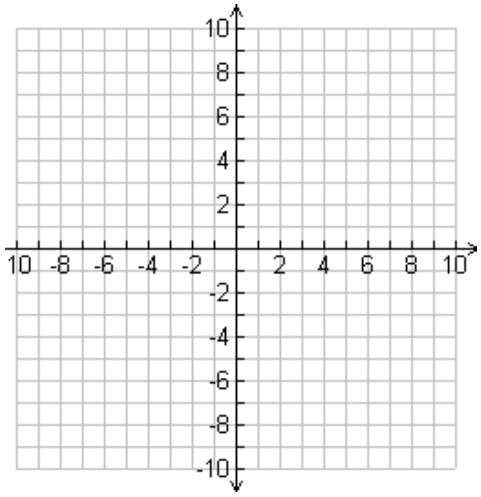
Quadrilaterals in the Coordinate Plane

Questions 1 – 2: Answer each question.

1. Three of the vertices of parallelogram ABCD are A(–2, –3), B(4, –3), and C(3, 2). Find the coordinates of point D.

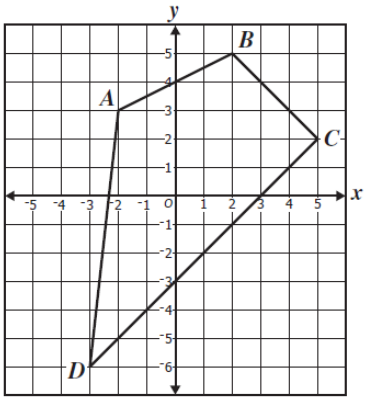


2. Three of the vertices of parallelogram ABCD are A(–4, 2), B(–3, 5), and C(3, 5). Find the coordinates of point D.



Questions 3 – 4: MULTIPLE CHOICE – Choose the best answer.

3. A quadrilateral is placed on a grid as shown.



Which point is the apparent midpoint of $\overline{BD}$ is –

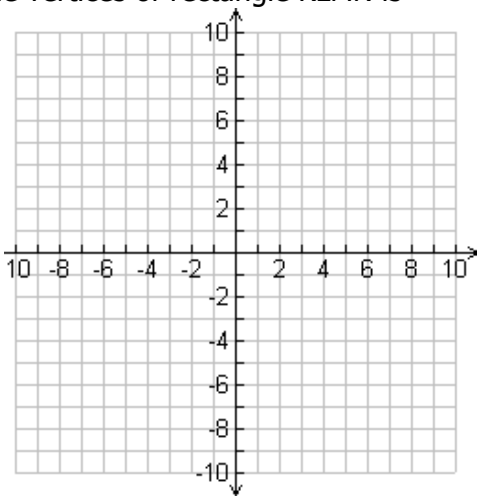
A (–0.5, –0.5)

B (0.5, 3.5)

C (1.5, 1.5)

D (1.5, 2.5)

4. The diagonals of rectangle KLMN intersect at the point (2, 1). One of the vertices of rectangle KLMN is located at (–4, 5).



Which of the following could be the location of another vertex of this rectangle?

A (8, –3)

B (3, –1)

C (–2, 3)

D (–10, 9)