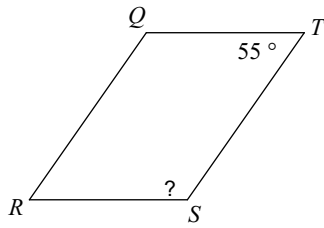


Unit 6 TEST Review

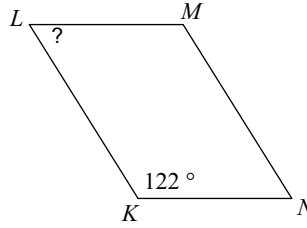
Find the measurement indicated in each parallelogram.

1)



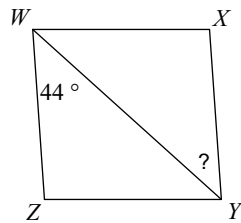
125°

2)



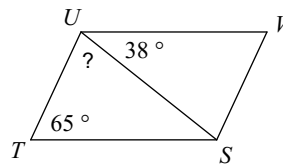
58°

3)



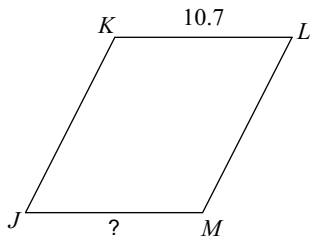
44°

4)



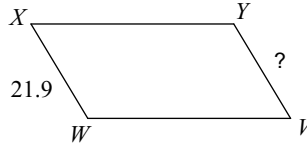
77°

5)



10.7

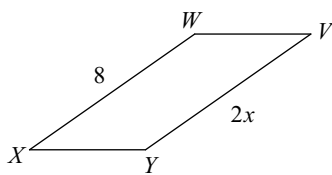
6)



21.9

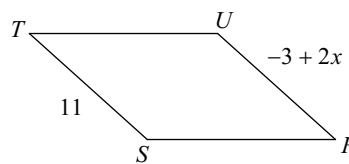
Solve for x. Each figure is a parallelogram.

7)



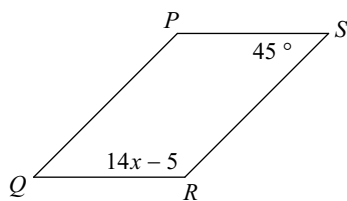
4

8)



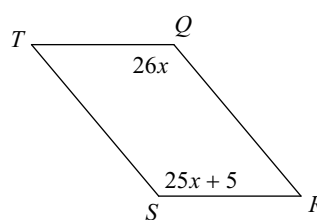
7

9)



10

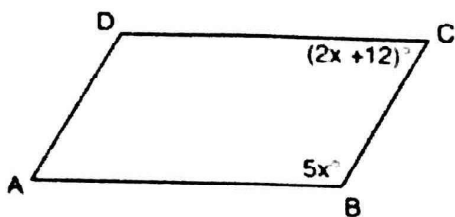
10)



5

Be able to identify and use the properties of a quadrilaterals, specifically parallelograms:

11. In the accompanying diagram of parallelogram $ABCD$, $m\angle B = 5x$, and $m\angle C = 2x + 12$. Find the number of degrees in $\angle D$.



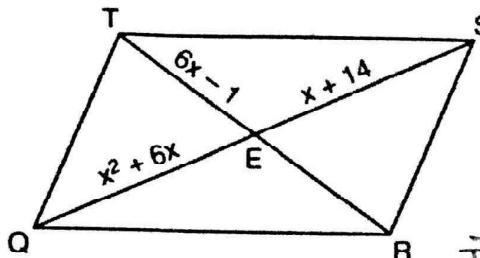
$$2x + 12 + 5x = 180$$

$$x = 24$$

$$\angle B = 24 \cdot 5 \text{ so } \angle D = 120^\circ$$

opposite angles are congruent

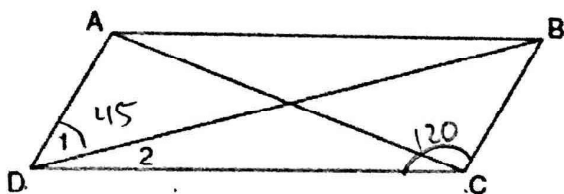
12. As shown in the diagram below, the diagonals of parallelogram $QRST$ intersect at E . If $QE = x^2 + 6x$, $SE = x + 14$, and $TE = 6x - 1$, determine TE algebraically.



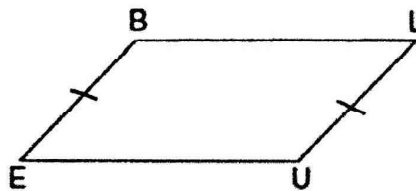
$$\begin{aligned} x^2 + 6x &= x + 14 \\ x^2 + 5x - 14 &= 0 \\ (x + 7)(x - 2) &= 0 \\ x &= -7 \quad x = 2 \end{aligned}$$

$$\overline{TE} = 6(2) - 1 = 11$$

13. In the diagram below of parallelogram $ABCD$ with diagonals AC and BD , $m\angle 1 = 45$ and $m\angle DCB = 120$.



In quadrilateral $BLUE$ shown below, $\overline{BE} \cong \overline{UL}$.



Which information would be sufficient to prove quadrilateral $BLUE$ is a parallelogram?

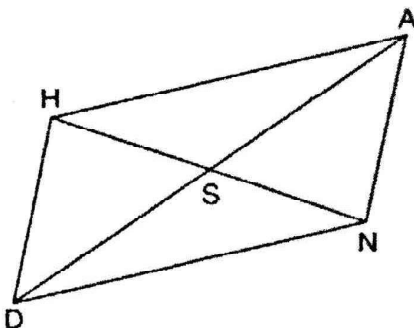
- 1) $\overline{BL} \parallel \overline{EU}$
- 2) $\overline{LU} \parallel \overline{BE}$
- 3) $\overline{BE} \cong \overline{BL}$
- 4) $\overline{LU} \cong \overline{EU}$

What is the measure of $\angle 2$?

- 1) 15°
- 2) 30°
- 3) 45°
- 4) 60°

$$120 + 45 + \angle 2 = 180$$

15. Parallelogram $HAND$ is drawn below with diagonals HN and AD intersecting at S .



Which statement is always true?

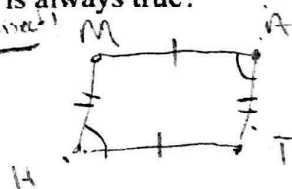
- 1) $AN = \frac{1}{2} AD$
- 2) $AS = \frac{1}{2} AD$
- 3) $\angle AHS \cong \angle ANS$
- 4) $\angle HDS \cong \angle NDS$

Diagonals bisect

17.

Quadrilateral $MATH$ has both pairs of opposite sides congruent and parallel. Which statement about quadrilateral $MATH$ is always true?

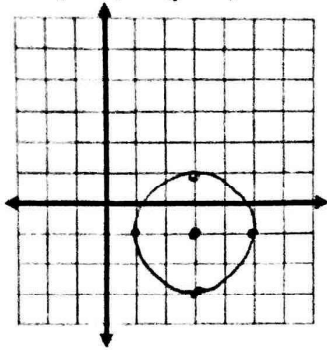
- 1) $\overline{MT} \cong \overline{AH}$ diagonals bisect
- 2) $\overline{MT} \perp \overline{AH}$ NO!
- 3) $\angle MHT \cong \angle ATH$ add to 180
- 4) $\angle MAT \cong \angle MHT$ ✓



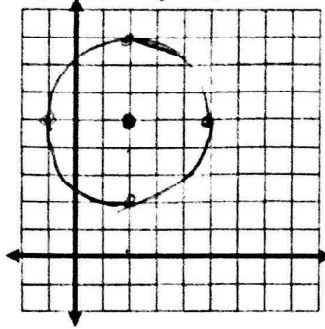
Be able to identify and use the properties of a circles in general and standard form.

18. Graph the following circle:

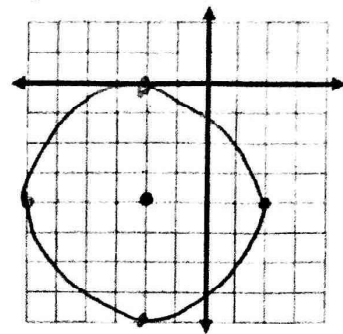
a. $(x - 3)^2 + (y + 1)^2 = 4$



b. $(x - 2)^2 + (y - 5)^2 = 9$



c. $(y + 4)^2 + (x + 2)^2 = 16$



19. For each circle: Identify its center and radius.

a. $(x + 3)^2 + (y - 1)^2 = 4$

Center: $(-3, 1)$

Radius: 2

b. $x^2 + (y - 3)^2 = 18$

Center: $(0, 3)$

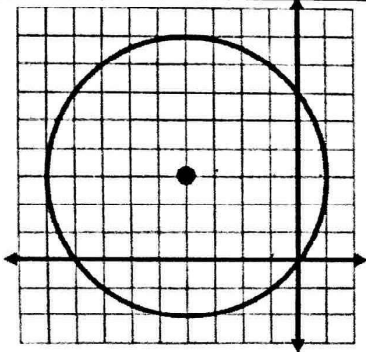
Radius: $\sqrt{18} \approx 4.2$

c. $(y + 8)^2 + (x + 2)^2 = 72$

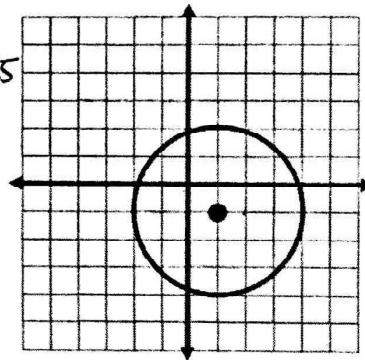
Center: $(-2, -8)$

Radius: $\sqrt{72} \approx 8.4$

20. Write the equation of the following circles:



$(x + 4)^2 + (y - 3)^2 = 25$



$(x - 1)^2 + (y + 1)^2 = 9$

21. Find the standard form, center, and radius of the following circles:

a. $x^2 + y^2 - 4x + 8y - 5 = 0$

$x^2 - 4x + y^2 + 8y = 5$

$(x^2 - 4x + 4) + (y^2 + 8y + 16) = 5 + 4 + 16$

$(x - 2)^2 + (y + 4)^2 = 25$

Center: $(2, -4)$

Radius: 5

b. $x^2 + y^2 + 9y + 5 = 0$

$x^2 + y^2 + 9y = -5$

$x^2 + (y^2 + 9y + 20.25) = -5 + 20.25$

$x^2 + (y + 4.5)^2 = 15.25$

Center: $(0, -4.5)$

Radius: $\sqrt{15.25}$ or $\frac{\sqrt{61}}{2}$

22. $x^2 - 2x + y^2 + 8y - 8 = 0$

$(x^2 - 2x + 1) + (y^2 + 8y + 16) = 8 + 1 + 16$

$(x - 1)^2 + (y + 4)^2 = 25$

Center: $(1, -4)$

Radius: 5

$x^2 + y^2 - 6x + 4y - 3 = 0$

$(x^2 - 6x + 9) + (y^2 + 4y + 4) = 3 + 9 + 4$

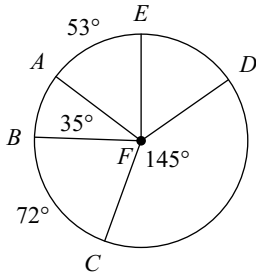
$(x - 3)^2 + (y + 2)^2 = 16$

Center: $(3, -2)$

Radius: 4

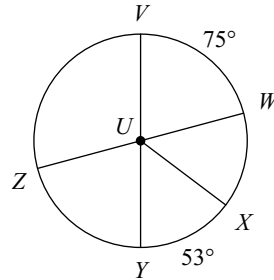
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

23) $m\angle EFD$



55°

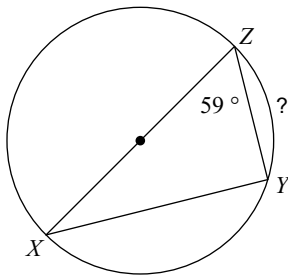
24) $m\angle VUX$



127°

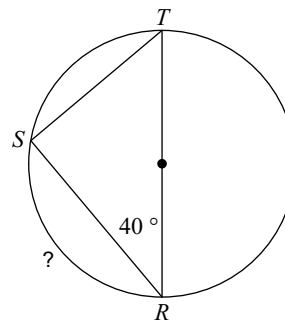
Find the measure of the arc or angle indicated.

25)



62°

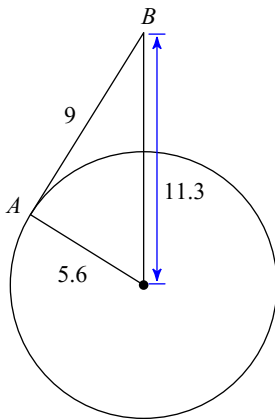
26)



100°

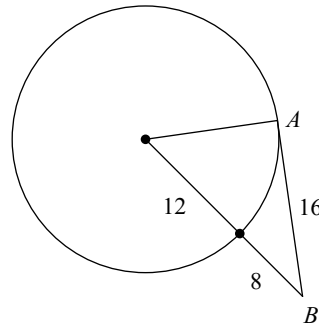
Determine if line AB is tangent to the circle.

27)



Not tangent

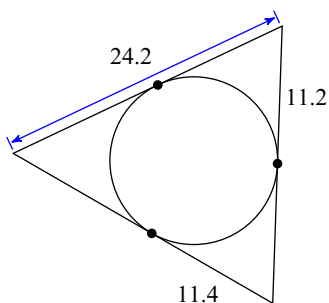
28)



Tangent

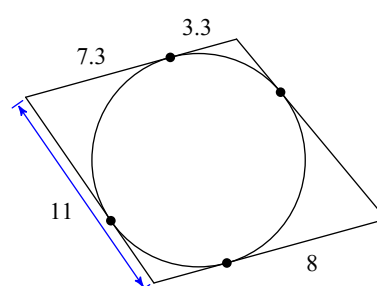
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

29)



71.2

30)



44.6