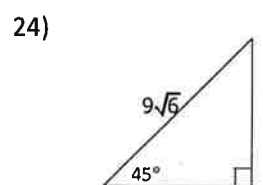
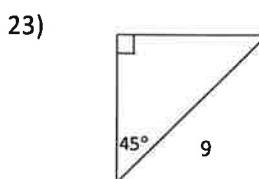
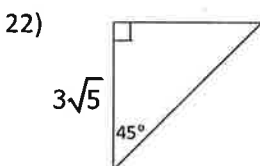
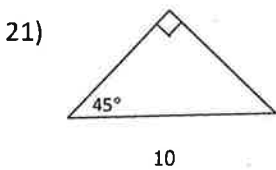
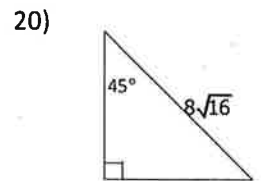
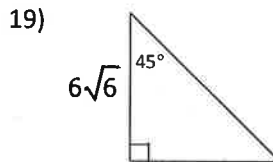
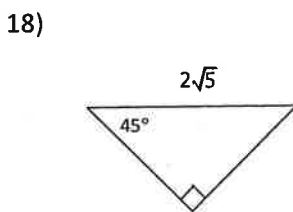
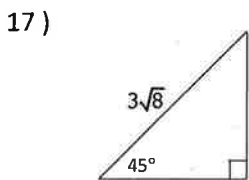
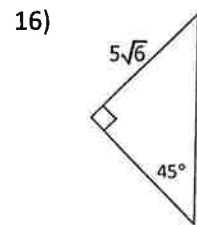
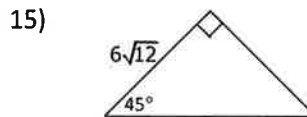
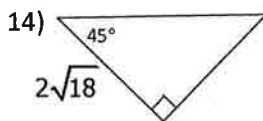
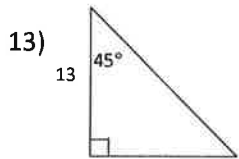
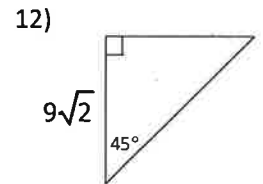
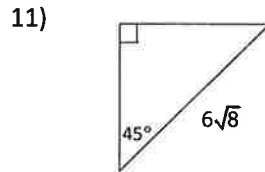
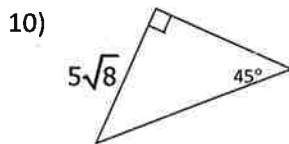
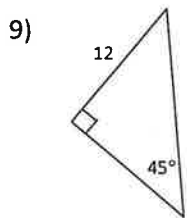
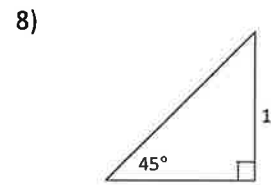
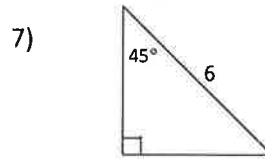
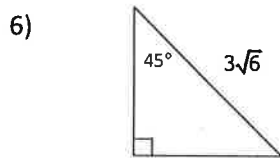
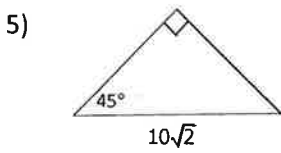
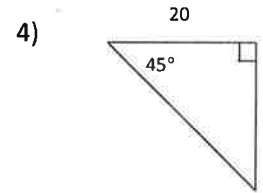
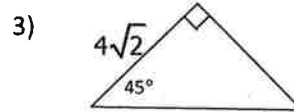
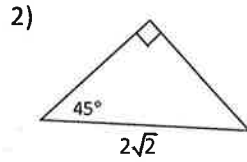
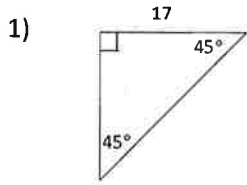
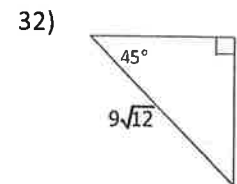
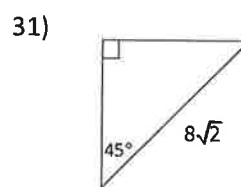
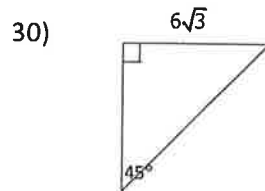
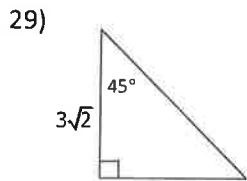
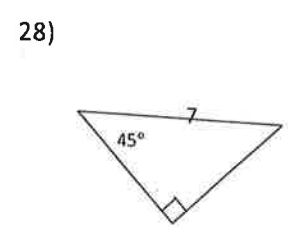
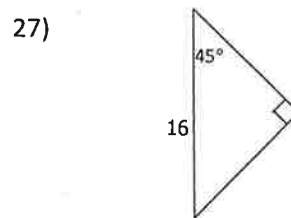
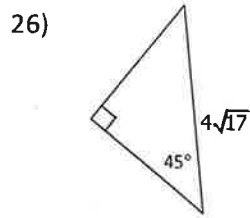
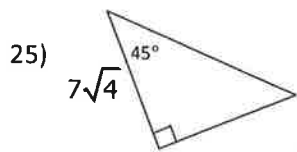


Find the value of the missing sides. Leave in rationalized and simplified form.





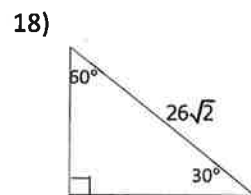
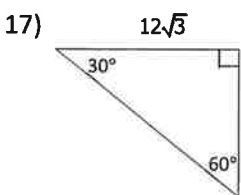
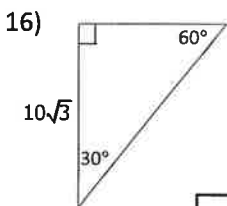
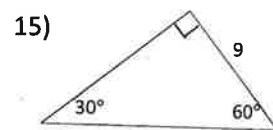
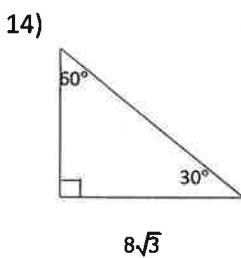
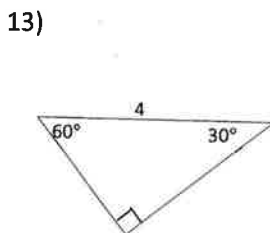
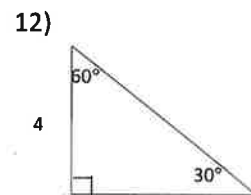
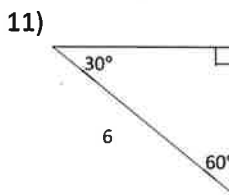
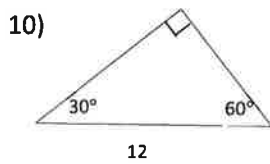
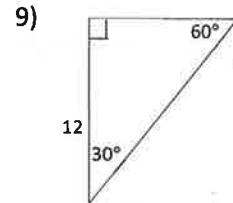
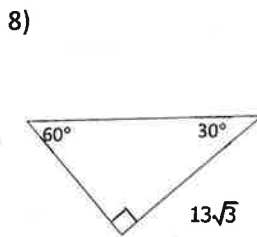
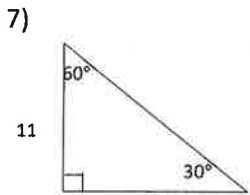
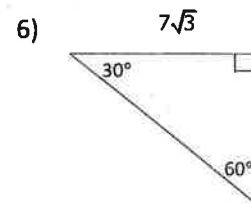
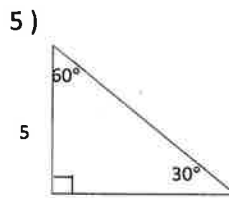
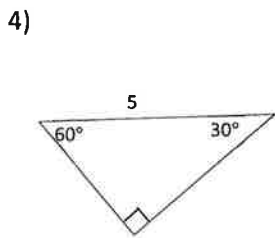
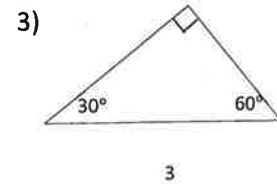
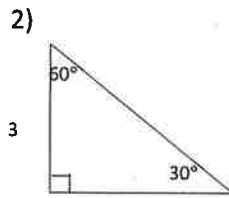
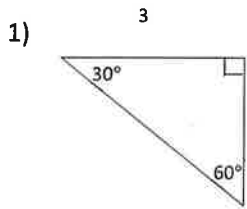
33) The sides of a square are 12 inches long. What is the length of the diagonal?

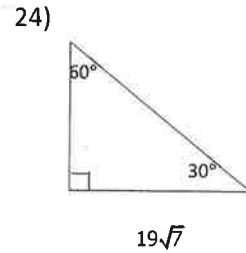
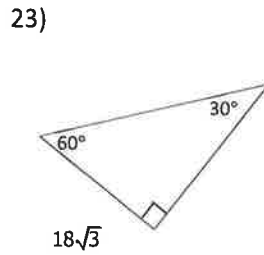
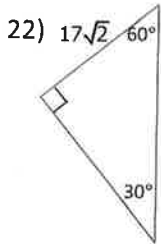
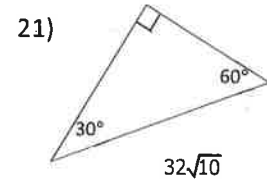
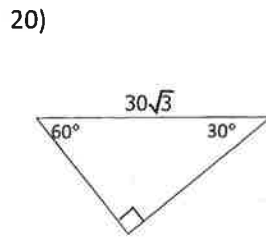
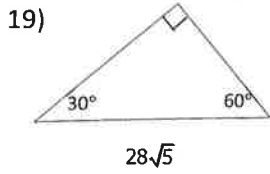
34) An isosceles right triangle has a hypotenuse of $8\sqrt{2}$ cm. What is the length of the legs of the triangle?

35) A square has a diagonal with the length of $8\sqrt{6}$ meters. What is the length of the sides?

36) An isosceles right triangles legs are $10\sqrt{8}$ feet long. What is the length of the hypotenuse?

Find the measure of the missing 2 sides for each figure below. Leave answer in rationalized and simplified form.





25) An equilateral triangle sides are 10 inches. What is the length of the altitude?

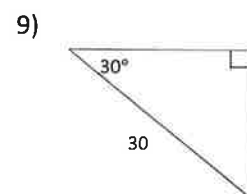
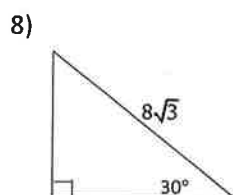
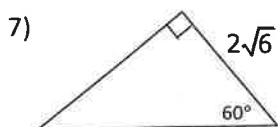
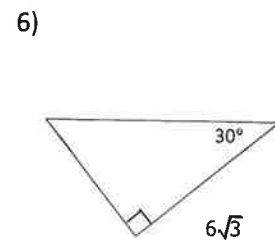
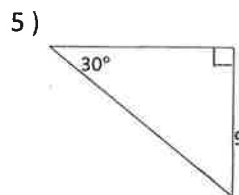
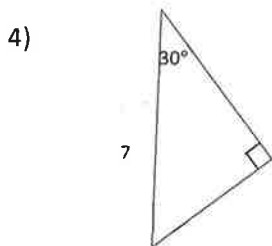
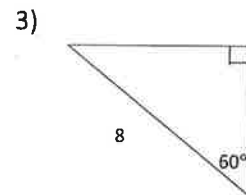
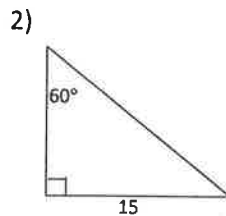
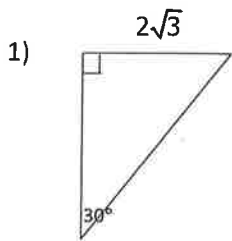
26) An equilateral triangle has an altitude of 6 cm. What is the length of the sides?

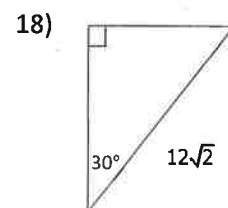
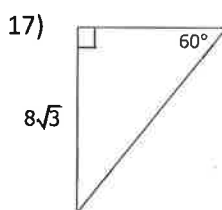
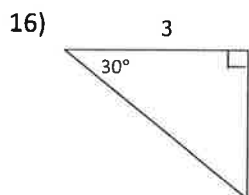
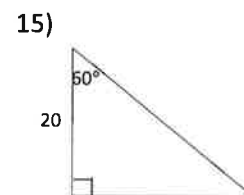
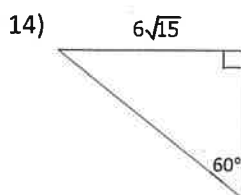
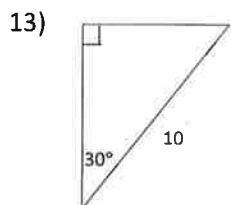
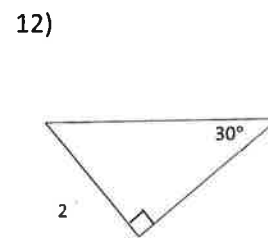
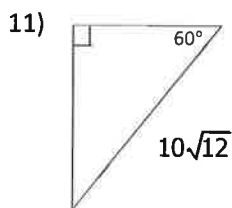
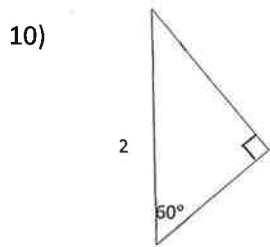
27) In a $30^\circ - 60^\circ - 90^\circ$ triangle, the shortest leg is 6, what is the length of the longest leg and the hypotenuse?

28) In a $30^\circ - 60^\circ - 90^\circ$ triangle, the longest leg is $4\sqrt{3}$, what is the length of the shortest leg and the hypotenuse?

27) In a $30^\circ - 60^\circ - 90^\circ$ triangle, the hypotenuse is $6\sqrt{3}$, what is the length of the legs of the triangle?

Find the measure of the missing 2 sides for each figure below. Leave answer in rationalized and simplified form.





Draw a picture for each of the following leave answers in rationalized and simplified form.

19) In an equilateral triangle, the sides are $14\sqrt{7}$. Find the length of the altitude.

20) In an equilateral triangle, the altitude is $4\sqrt{5}$. Find the length of the sides.

21) In an equilateral triangle, the altitude is $\sqrt{7}$. Find the length of the sides.

22) In an equilateral triangle, the sides are $6\sqrt{10}$. Find the length of the altitude.

23) In a 30-60-90 triangle, the hypotenuse is $15\sqrt{3}$. Find the length of the longest leg.

24) In a 30-60-90 triangle, the shortest leg is $4\sqrt{21}$. Find the length of the longest leg.

Directions: Solve each quadratic equation by square roots.

1.) $10(x - 7)^2 = 440$

2.) $(4x - 3)^2 + 7 = 39$

3.) $5 - 6y^2 = 113$

Directions: Solve each quadratic equation by factoring.

4.) $x^2 - 64 = 0$

5.) $8x^2 - 2x - 18 = -15$

6.) $7x^2 = -28x$

Directions: Solve each quadratic equation using the quadratic formula.

7.) $2x^2 + 3x + 1 = 0$

8.) $4x^2 - 8x = -3$

Directions: Solve each quadratic equation by completing the square

9.) $y^2 + 2y + 1 = 0$

10.) $x^2 + 4x = -7$

Name _____

Date _____

Per _____

SohCahToa Int 2

1. A ski run has an angle of elevation of 24.4° and a vertical drop of 1100 feet. To the nearest foot, how long is the ski run?
2. Kurt visits Yellowstone Park and Old Faithful on a perfect day. His eyes are 6 feet from the ground, and the geyser can reach heights ranging from 90 feet to 184 feet. If Kurt stands 200 feet from the geyser and the eruption rises 175 feet in the air, what is the angle of elevation to the top of the spray to the nearest tenth?
3. On July 20 1969, Neil Armstrong became the first human to walk on the moon. During this mission, Apollo 11 orbited the moon three miles above the surface. At one point in the orbit, the onboard guidance system measured the angles of depression to the far and near edges of a large crater. The angles measured 16° and 29° , respectively. Find the distance across the crater.
4. A person whose eyes are 5 feet above the ground is standing on the runway of an airport 100 feet from the control tower. That person observes an air traffic controller at the window of the 132-foot tower. What is the angle of depression?
5. Miss Contreras is snowboarding in Vail Colorado. She is sitting on a chair lift at the top of a mountain. The elevation of the mountain is 1490 meters. Her eye level is 2.2 meters from the ground at the top of the mountain. She spotted a skier who took a fall at the bottom at an angle of depression of 33° , about how far is the insured skier from Miss Contreras' eyes? Round to the nearest tenth.

NAME _____

PER _____

DATE _____

INTEGRATED 2: GRAPHING QUADRATICS

Graph the following quadratics using a t-table

1. $f(x) = x^2 + 4x + 8$

vertex form: _____

vertex _____ max or min? _____

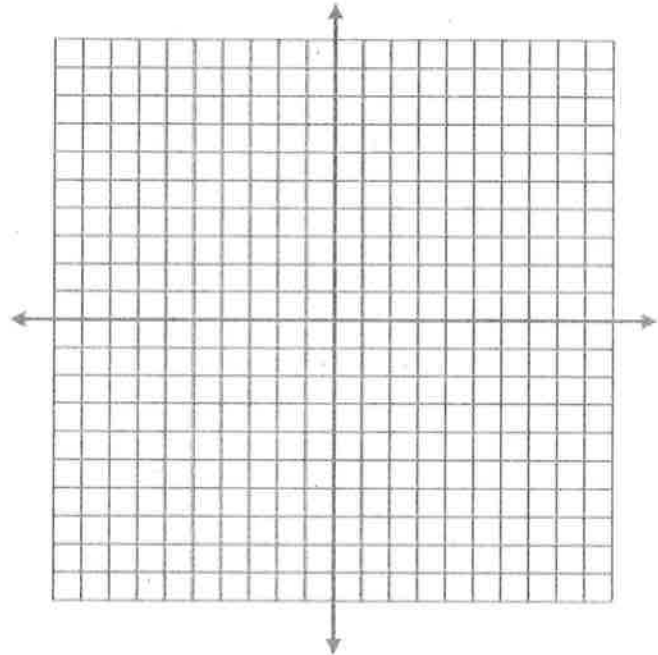
x - int _____

y - int _____

axis of sym _____

domain _____

range _____



2. $f(x) = 3x^2 - 18x + 15$

vertex form: _____

vertex _____ max or min? _____

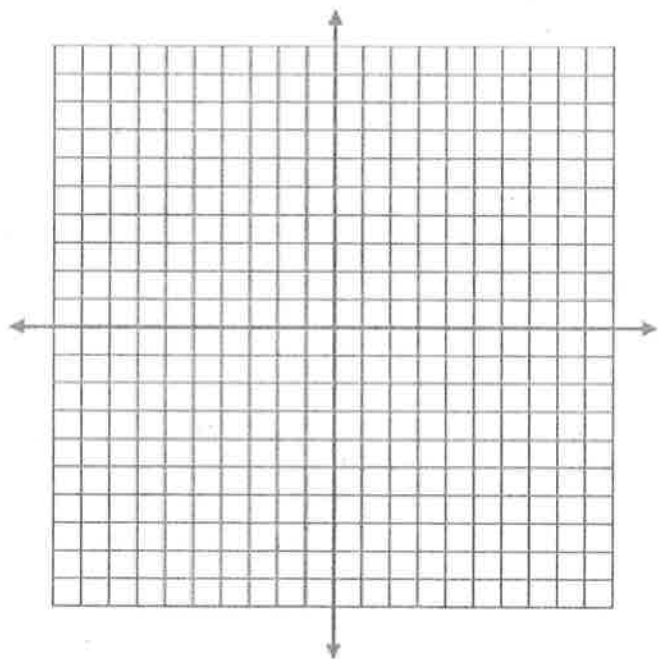
x - int _____

y - int _____

axis of sym _____

domain _____

range _____



3. $f(x) = -4x^2 + 8x - 3$

vertex form: _____

vertex _____ max or min? _____

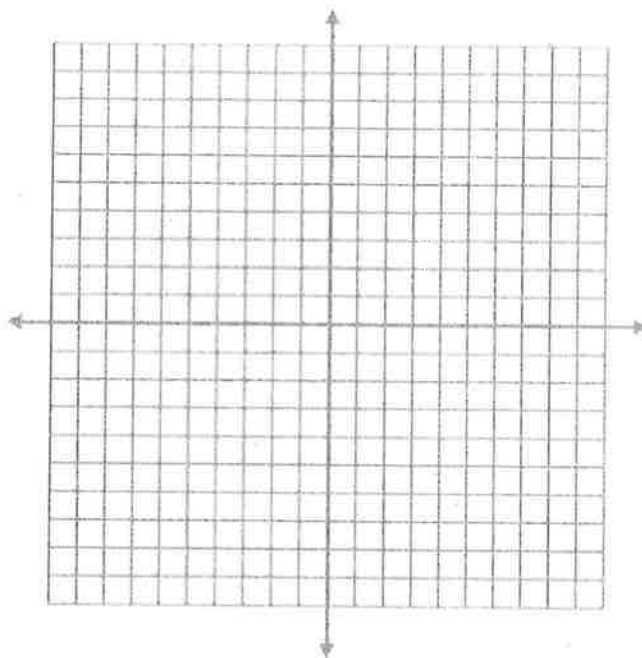
x - int _____

y - int _____

axis of sym _____

domain _____

range _____



4. $f(x) = -3x^2 + 6x + 3$

vertex form: _____

vertex _____ max or min? _____

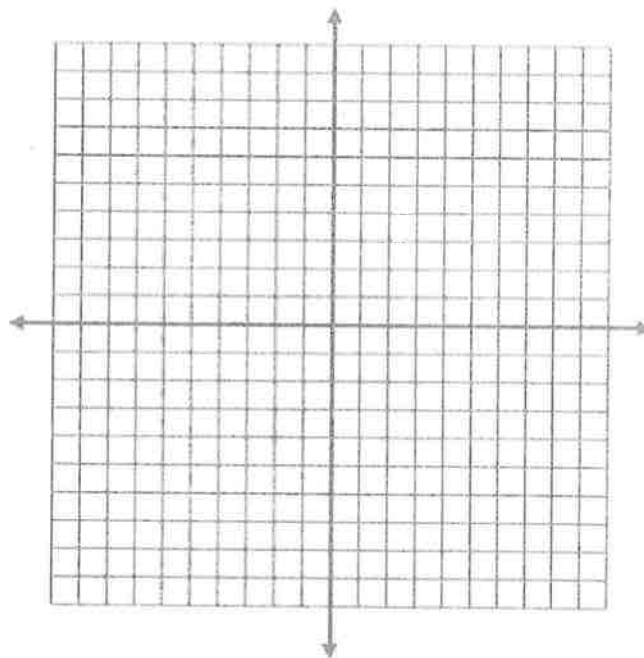
x - int _____

y - int _____

axis of sym _____

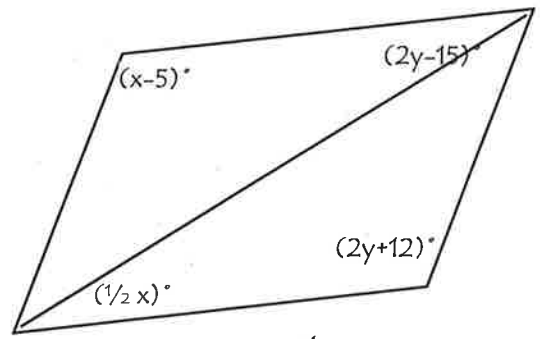
domain _____

range _____



Exploring Quadrilaterals

Refer to the parallelogram at the right



1) find the value of x and y

1. $x =$ _____

$y =$ _____

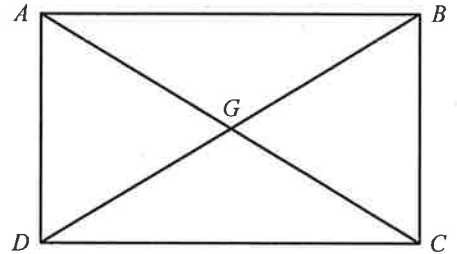
2) Parallelogram EFGH, $EF = y + 2x$, $FG = 5y - 2x$, $GH = 4$, and $EH = 3y + 2x$. Find the value of x and y

2. $x =$ _____

$y =$ _____

Quadrilateral ABCD is a rectangle.

3) If $AG = -4k + 24$ and $DG = 9k + 102$, find BD.



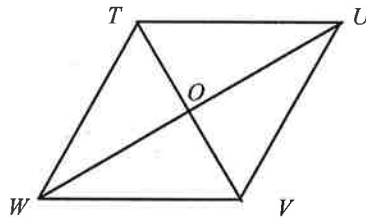
4) If $m\angle ADB = 2y + 40$ and $m\angle CDB = -3y + 51$,
 a) find $m\angle CBD$.
 b) find $m\angle DAC$

3. _____

4a. _____

4b. _____

In rhombus TUVW,



5) if $m\angle TUW = 34$, find $m\angle UVT$.

6) if $TU = 12$, find WV

7) If $m\angle WVU = x^2 - 6$ and $m\angle WTV = 5x + 9$, find the value of x.

5. _____

6. _____

7. _____

8) If DEFG is a square, find $m\angle DEG$. Draw and label the square

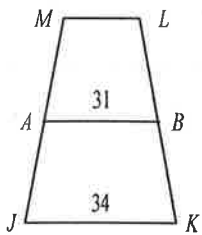
8. _____

Given each set of vertices, determine whether parallelogram ABCD is a rhombus, a rectangle, a square or none. List all that apply.

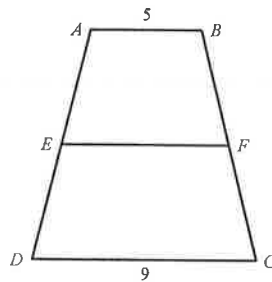
9) $A(-2, -1), B(-4, 3), C(1, 5), D(3, 1)$

9. _____

10) For trapezoid JKLM, A and B are midpoints of the legs. Find ML



11) For trapezoid ABCD, E and F are the midpoints of the legs. Let \overline{GH} be the median of ABFE. Find GH



10. _____
 11. _____

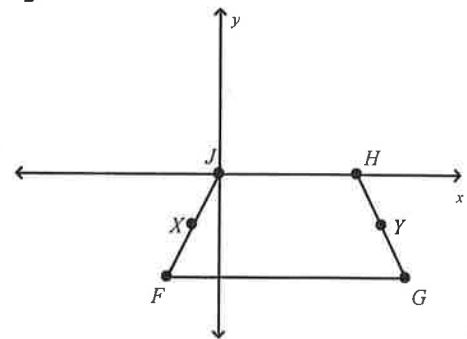
12) Use the figure below, write a coordinate proof for the following:

The median of a trapezoid is parallel to the bases.

$J(0, 0), H(a, 0), G(a+b, -c), F(-b, -c)$

Given: $FGHJ$ is a trapezoid with median \overline{XY} .

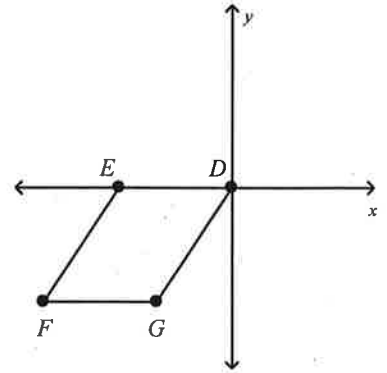
Prove: $\overline{XY} \parallel \overline{FG}$ and $\overline{XY} \parallel \overline{JH}$



- 13) Use the figure below, write a coordinate proof for the following:
 If the diagonals of a parallelogram are congruent, then it is a rectangle.
 $D(0, 0)$, $E(-a, 0)$, $F(-a-b, -c)$, $G(-b, -c)$

Given: parallelogram DEFG; $\overline{GE} \cong \overline{FD}$

Prove: DEFG is a rectangle



- 14) Parallelogram KLMN has vertices with coordinates $K(0, 0)$, $L(a, 0)$, $M(a+b, c)$ and $N(b, c)$

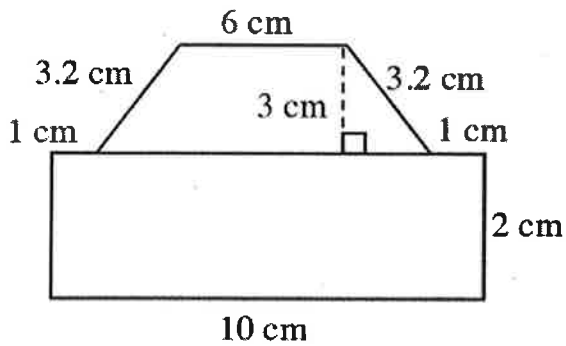
- If $c^2 = a^2 - b^2$, what can you determine about the slopes of the diagonals \overline{KM} and \overline{LN} ?
- What kind of parallelogram is KLMN?

a _____
 b _____

INT 2: Mastery Quiz #3 Area & Perimeter

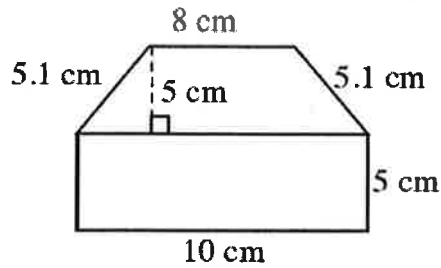
Determine the area & Perimeter of each Figure

1.



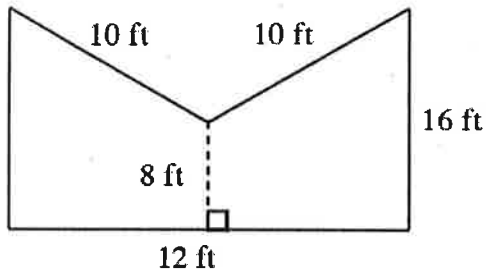
Area _____ Perimeter _____

2.



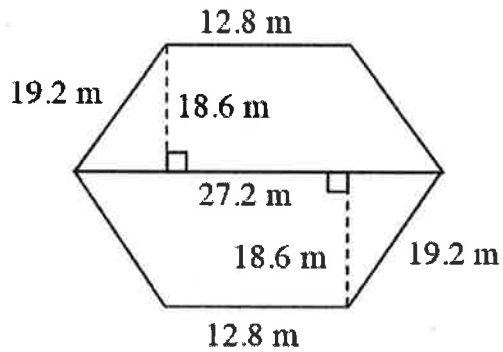
Area _____ Perimeter _____

3.



Area _____ Perimeter _____

4.

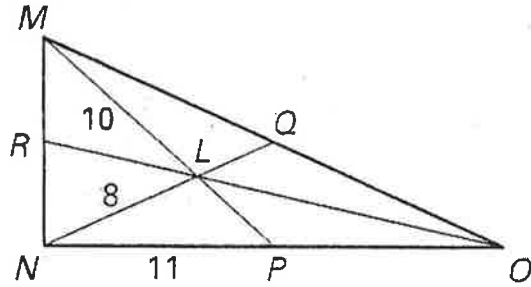


Area _____ Perimeter _____

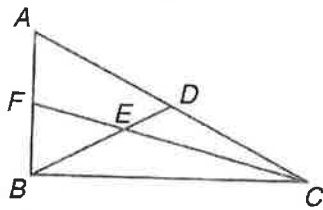
Use the figure shown and the given information.

L is the centroid of $\triangle MNO$, $NP = 11$, $ML = 10$, and $NL = 8$.

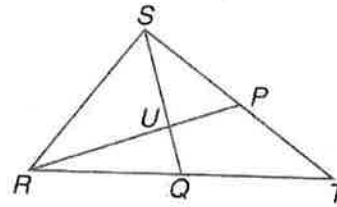
14. Find the length of \overline{PO} .
15. Find the length of \overline{MP} .
16. Find the length of \overline{LQ} .
17. Find the length of \overline{NQ} .
18. Find the perimeter of $\triangle NLP$.



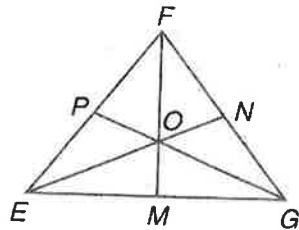
19. If \overline{BD} and \overline{CF} are medians of $\triangle ABC$ and $CE = 17$, what is EF ?



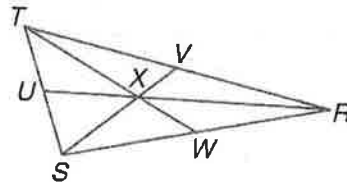
20. In $\triangle RST$, \overline{RP} and \overline{SQ} are medians. Find RU if $UP = 7.3$.



21. In $\triangle EFG$, \overline{GP} , \overline{FM} , and \overline{EN} are medians. If $EM = 2x + 3$ and $MG = x + 5$, what is x ?

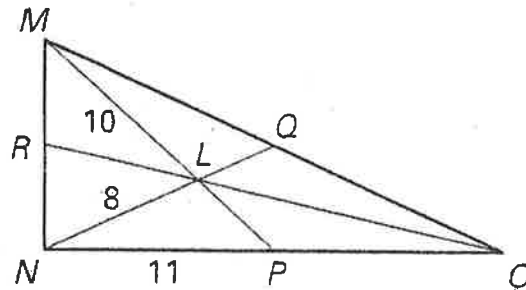


22. \overline{RU} , \overline{SV} , and \overline{TW} are medians of $\triangle RST$. What is the measure of \overline{RW} if $RV = 4x + 3$, $WS = 5x - 1$, and $VT = 2x + 9$?

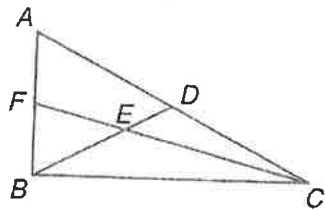


Use the figure shown and the given information.
 L is the centroid of $\triangle MNO$, $NP = 11$, $ML = 10$, and $NL = 8$.

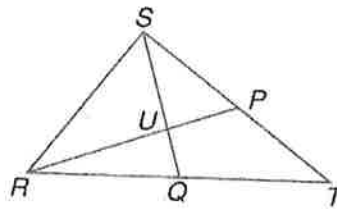
14. Find the length of \overline{PO} .
15. Find the length of \overline{MP} .
16. Find the length of \overline{LQ} .
17. Find the length of \overline{NQ} .
18. Find the perimeter of $\triangle NLP$.



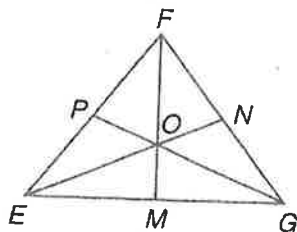
19. If \overline{BD} and \overline{CF} are medians of $\triangle ABC$ and $CE = 17$, what is EF ?



20. In $\triangle RST$, \overline{RP} and \overline{SQ} are medians. Find RU if $UP = 7.3$.



21. In $\triangle EFG$, \overline{GP} , \overline{FM} , and \overline{EN} are medians. If $EM = 2x + 3$ and $MG = x + 5$, what is x ?



22. \overline{RU} , \overline{SV} , and \overline{TW} are medians of $\triangle RST$. What is the measure of \overline{RW} if $RV = 4x + 3$, $WS = 5x - 1$, and $VT = 2x + 9$?

