| Name: | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Teacher: | | Period: | | Date: | | | |

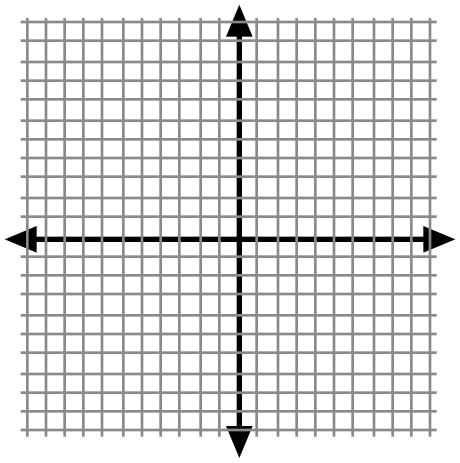
# Geometry

**Show All Work For Credit**

1) *Midpoint Formula:*

a) Find the midpoint C between $\overline{AB}$ where A = (-2, 4) and B = (8, -4).

b) Draw the picture and label the points.



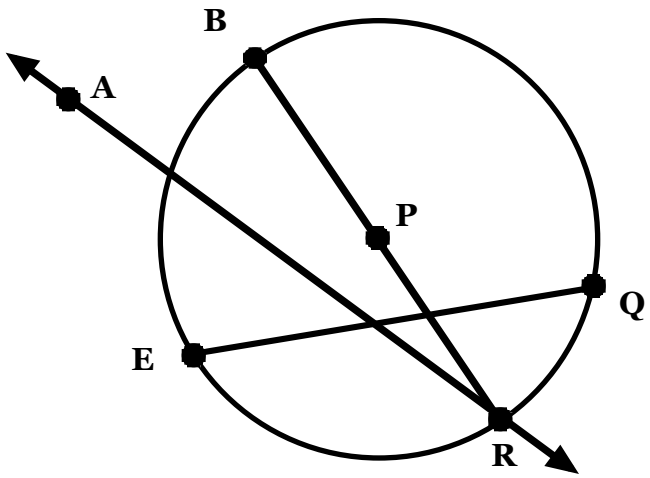
2) *Circle ID*: Be as specific as possible.

a) What is $\overleftrightarrow{AR}$? _____

b) What is $\overline{PR}$? _____

c) What is $\overset{\frown}{BE}$? _____

d) What is $\overset{\frown}{BQE}$? _____




3) *Quadrilateral ID*:

Draw the following:

a) a kite.

b) a parallelogram.

c) a rhombus.

d) a trapezoid.

4) *Inductive Reasoning*:

What is the 2006th term in this sequence?

**9, 14, 19, 24, 29, 34, … ,**

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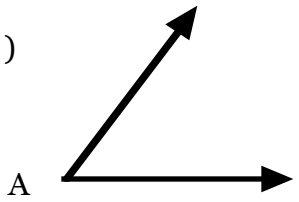
5) *Copying Constructions*: Construct triangle ABC from these parts. Show all construction marks.


a)




b)

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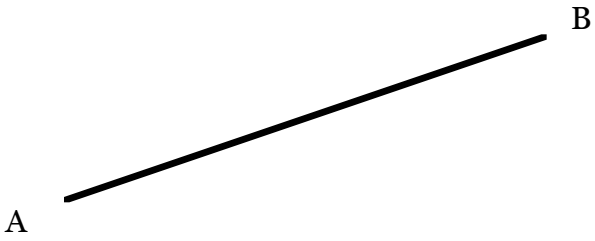
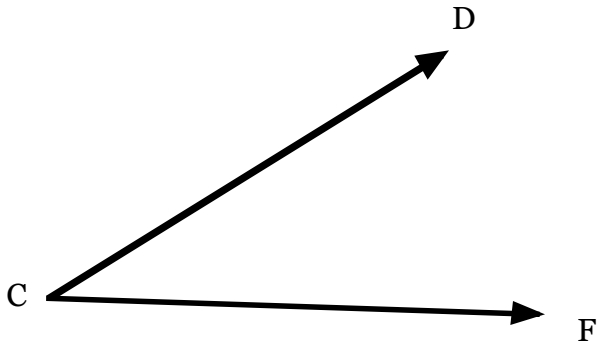
6) *Constructing Bisectors*: Construct an angle bisector and a perpendicular bisector.

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7) *Slope:*

a) Find the slope between
A = (4, 10) and B = (7, -2).

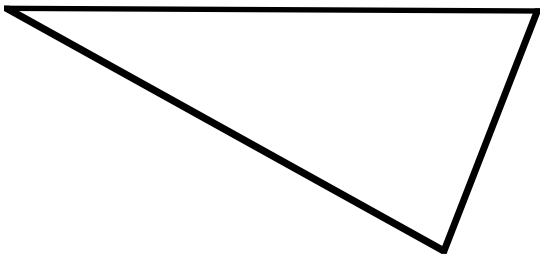
b) Are $\overline{AB}$ and $\overline{CD}$ parallel, perpendicular, or neither given:

A = (2, 5) C = (3, -9)
B = (7, 10) D = (-6, 0)

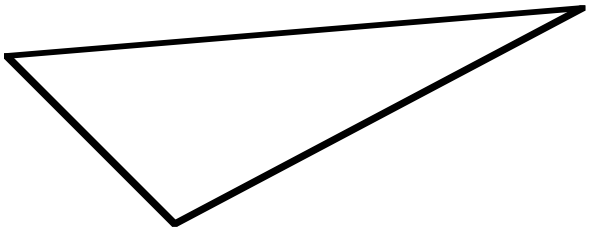
Justify your answer.

8) *Inscribed/Circumscribed:* Construct the inscribed circle of (a) and the circumscribed of (b).

a)



b)



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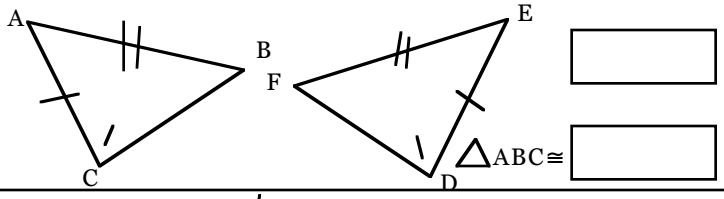
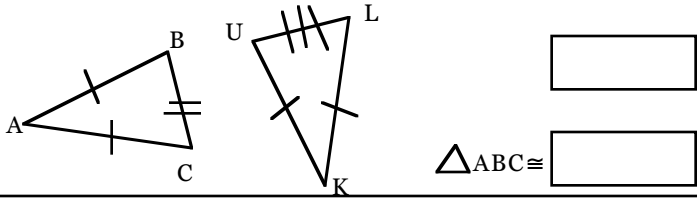
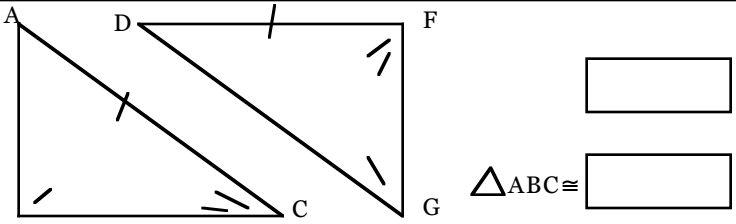
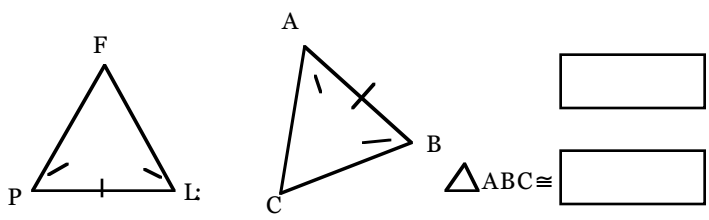
9) *Triangle Congruency:* If the triangles are congruent, then write a) the appropriate conjecture, and b) the congruency statement. If they are not, then tell why.

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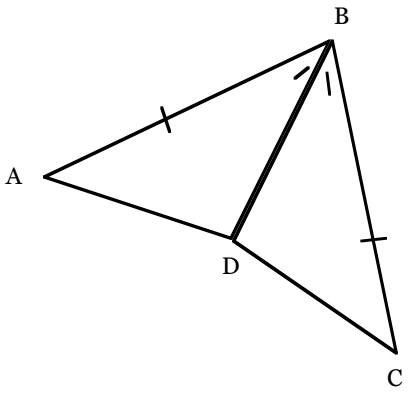
10) *Triangle Proofs:* Prove that △ABD ≅ △CBD.

| Statement | Reason |
|---|---|
| | |

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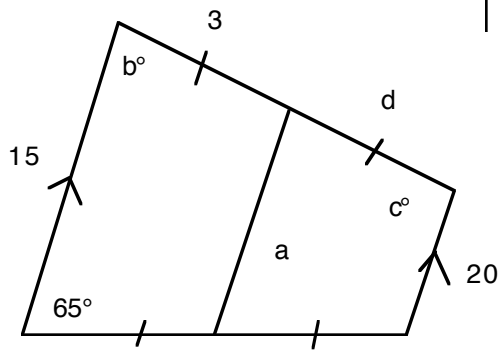
11) *Polygon Angles:*

What is the interior angle sum of a 13-gon?

The interior sum of what polygon is 5040°?

12) *Trapezoids:* Solve for a, b, c, and d.




a = ☐

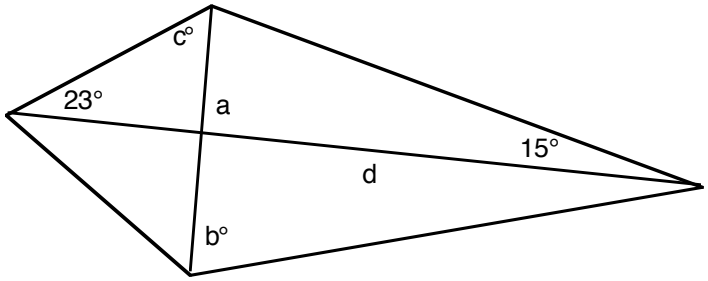
b = ☐

c = ☐

d = ☐

---

13) *Kites:* Solve for a, b, c, and d.




a = ☐

b = ☐

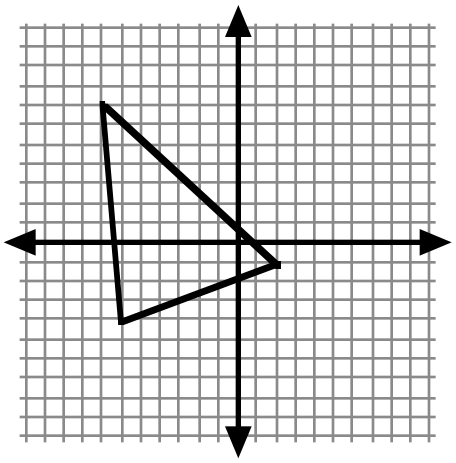
c = ☐

d = ☐

---

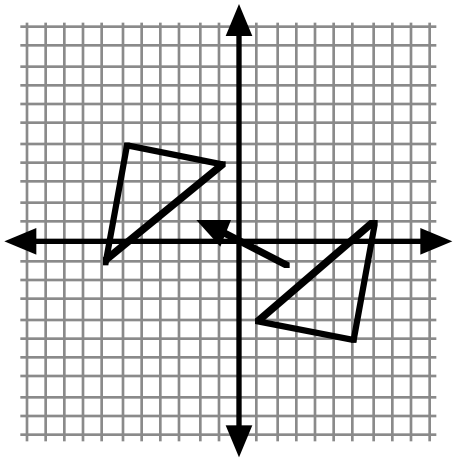
14) *Transformations:*

a) Draw: (x, y) → (x + 1, -y)

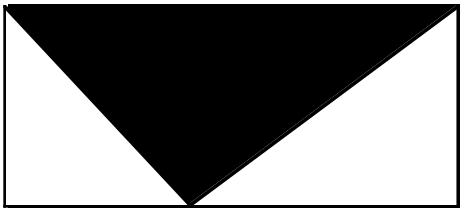


b) Fill in the translation:

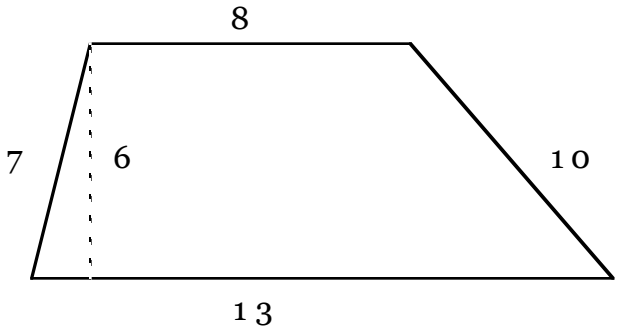
(x, y) → ( , )



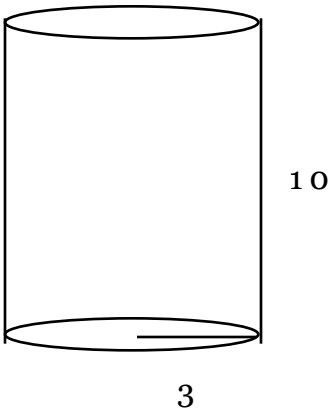
15) *Triangles:* Find the shaded area.



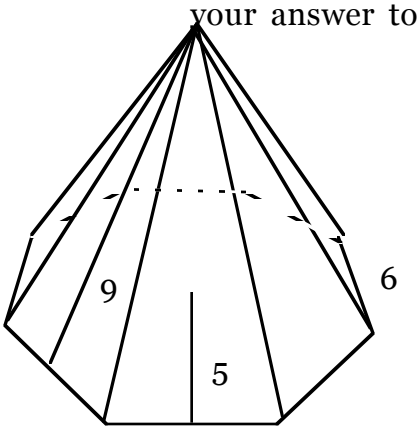

16) *Trapezoids:* Find the area of the trapezoid.




17) *Cylinders:* Find the surface area of this cylinder. Round your answer to one decimal place.



18) *Pyramids:* Find the surface area of this pyramid. The base is a regular octagon. Round your answer to one decimal place.

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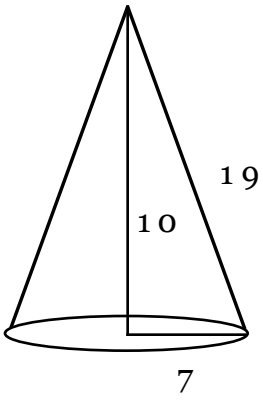
19) *Cones:* Find the surface area of this cone.

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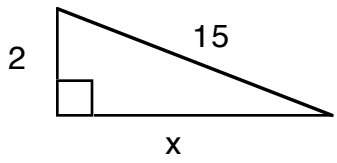
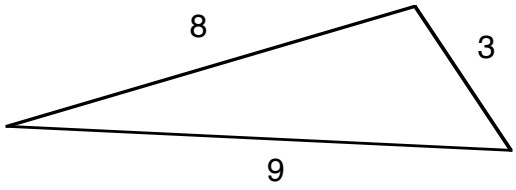
20) *Pythagorean Theorem:*

Solve for x.

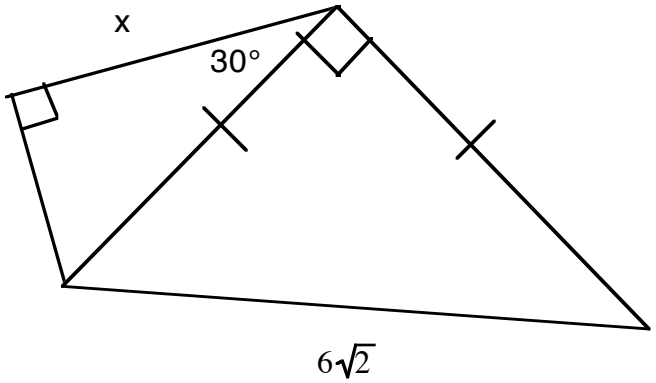



Is this triangle acute, obtuse, or right?



21) *Special Triangles:*

Solve for x.

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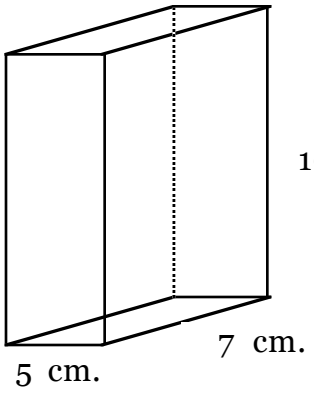
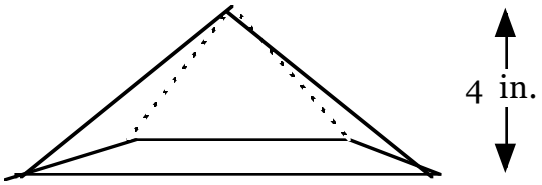
22) *Volume:* This is a rectangular base.




This is a trapezoidal base with $b_1$ = 5 in.; $b_2$ = 15 in.; and height = 3 in.

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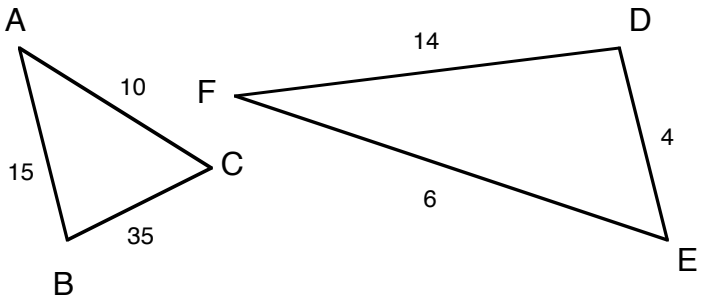
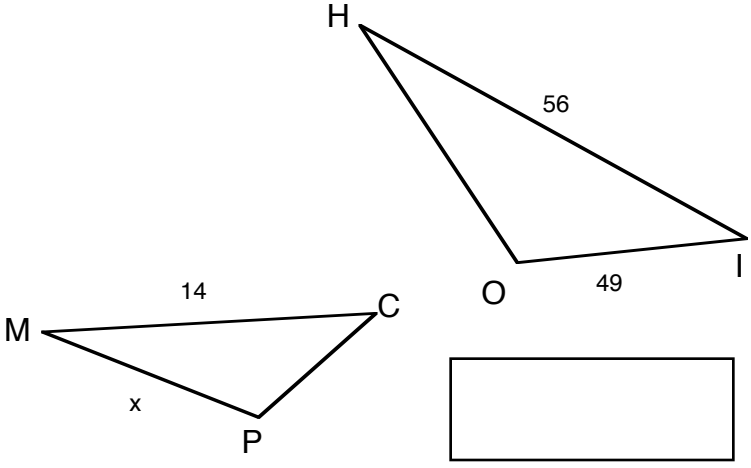
23) *Similarity*

a) Is ABC ~ DEF. Justify your answer.




b) PCM ~ IOH. Find x.



24) *Similar Area / Volume*

It takes 12 gallons of paint to cover a wall that is 15 feet x 20 feet. How many gallons of paint would it take to cover a wall that is 45 feet x 60 feet?

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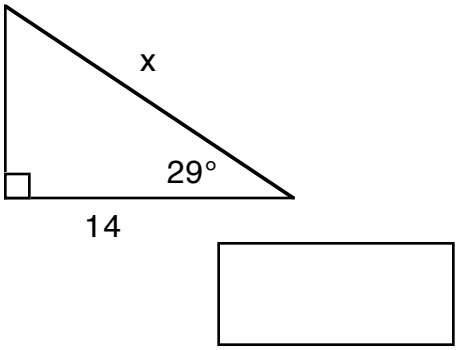
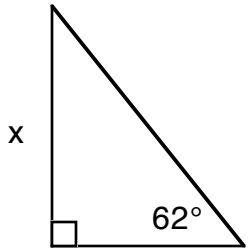
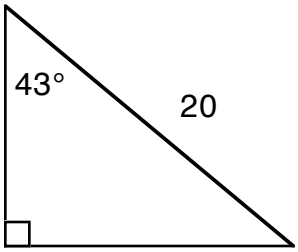
25) *Sine/Cosine/Tangent:* Solve for x.

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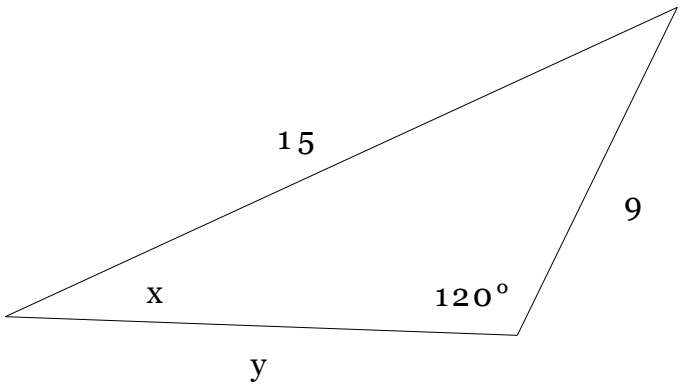
26) *Law of Sines:* Fill in the missing parts of this triangle.




x

y

27) *Logical Statements:* Give the inverse, converse, contrapositive and truth values.

| Statement | Converse |
| --- | --- |
| | If there isn't anything good on tv then we will have to read a book. |
| **Inverse** | **Contrapositive** |
| | |

28) *Logical Arguments:* Identify these arguments as either modus ponens, modus tollens, the law of syllogism, or invalid. Then give the conclusion.

If money makes the world go 'round, then we will fly off. If money makes the world go 'round, then we must all get jobs.

Argument:

Conclusion:

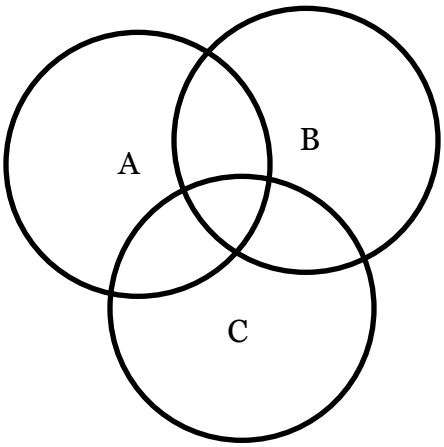
If I eat all my food then I will become short. I am tall.

Argument:

Conclusion:

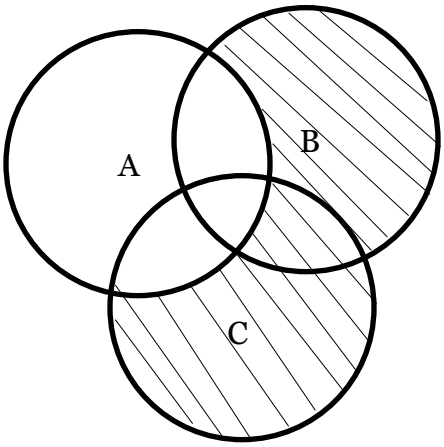
29) *Venn Diagrams:*

Shade the correct region:




$A \cap B \cap C'$

Give the Venn notation:




30) *3D Visualization:* Draw the net for this solid.