Geometry
Final Review

Name: _____

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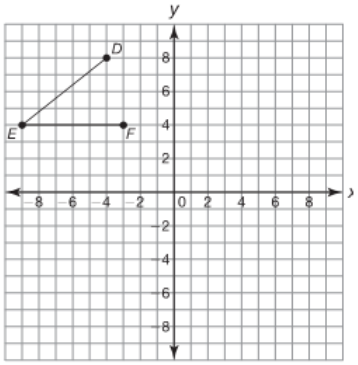
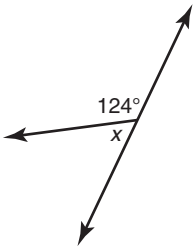
1) Determine the midpoint of a line segment with the endpoints $(3, 8), (9, 10)$

2) Translate angle DEF 12 units down.



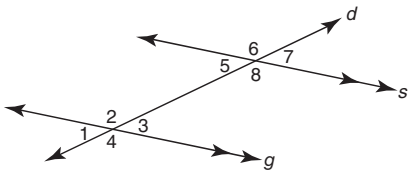
3) Find x.



4) Write the theorem that is illustrated by each statement and diagram.

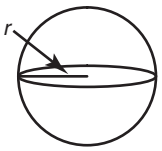
Angle 4 and angle 7 are supplementary

∠4 and ∠7 are supplementary

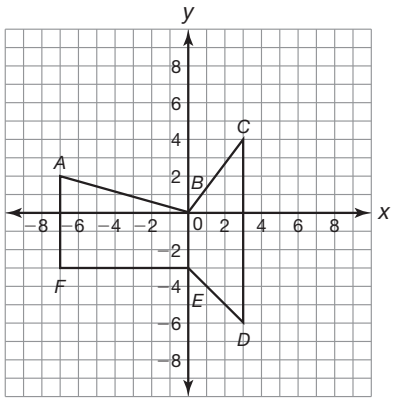


5) Find the volume. Round to the nearest tenth.

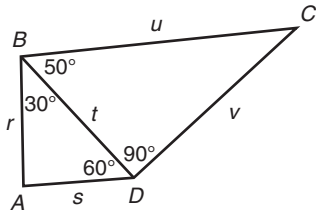
$r = 2.5$ centimeters



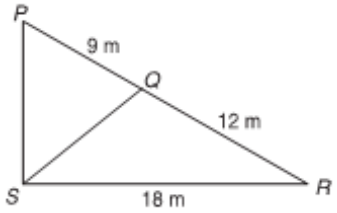
6) Find the area and perimeter of the following.



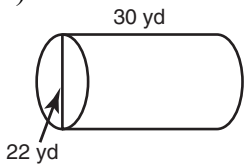
7) List the side lengths from shortest to longest.



8) $\overline{SQ}$ bisects angle S. Calculate SP.



9) Find the volume.



10) Determine the midpoint of a line segment with the endpoints $(6, -3), (-4, 5)$

11) What is the equation of the line parallel to $y = -\frac{1}{2}x + 6$ that passes through $(-4, 1)$?

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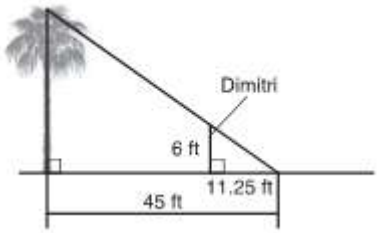
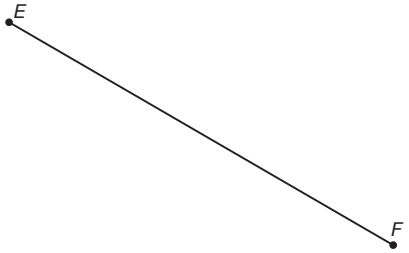
12) Dimitri wants to measure the height of a palm tree. He lines himself up with the palm tree's shadow so that the tip of his shadow meets the tip of the palm tree's shadow. Then, he asks a friend to measure the distance from where he was standing to the tip of his shadow and the distance from the palm tree to the tip of its shadow.



What is the height of the palm tree?

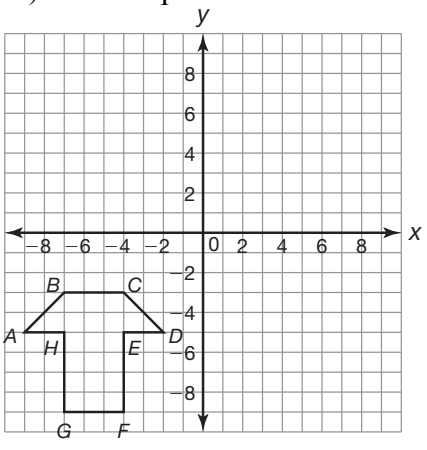
13) Locate the midpoint using construction and label it M.



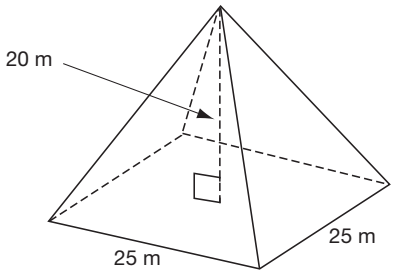
14) Identify the property demonstrated.

$m\angle 1 = 134°$ and $m\angle 2 = 134°$,
so $m\angle 1 = m\angle 2$

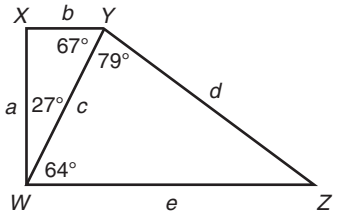
15) Find the perimeter and area.



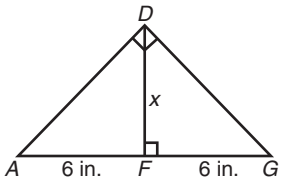
16) Find the volume.



17) List the side lengths from shortest to longest.

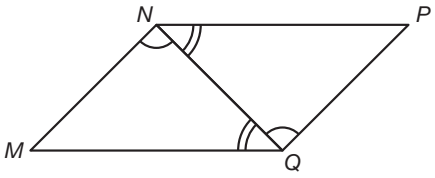


18) Solve for x.



19) Determine whether there is enough information to prove that the pair of triangles are congruent by ASA. Write the congruence statement to justify your reasoning.

$\triangle MNQ \stackrel{?}{\cong} \triangle PQN$



20) Determine the midpoint of a line segment with the endpoints $(-2, 7), (-8, -9)$

21) Identify the property demonstrated.
$GH = GH$

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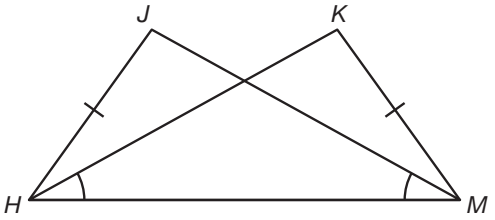
22) Determine whether there is enough information to prove that the triangles are congruent by SSS or SAS. Write the congruence statements to justify your reasoning.

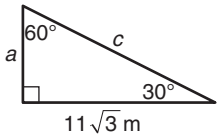
$\triangle HJM \overset{?}{\cong} \triangle MKH$



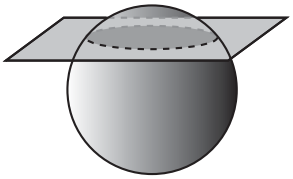
23) Construct a line segment twice the length of $\overline{JK}$.

24) Line segment $\overline{AB}$ is 9.5 centimeters long. Larry bisects the line segment. Label the point of intersection P. What is the length of $\overline{AP}$?

25) Find the missing lengths. Write your answers in radicals in simplest form.



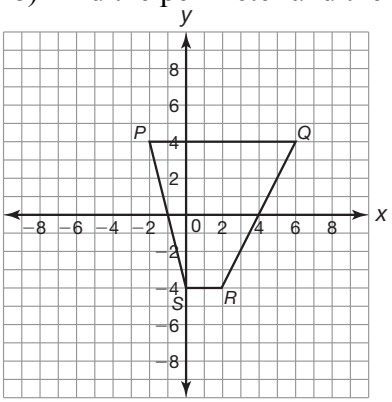
26) Describe the shape of the cross section.



27) Determine whether inductive or deductive reasoning is used in each situation.

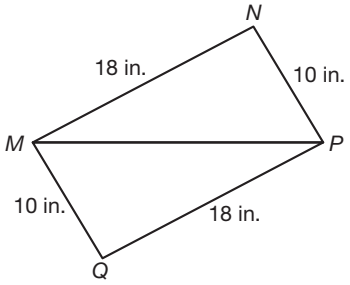
"Isabella sees 5 red fire trucks. She concludes that all fire trucks are red."

28) Find the perimeter and the area.



29) Determine whether there is enough information to prove that the triangles are congruent by SSS or SAS. Write the congruence statements to justify your reasoning.

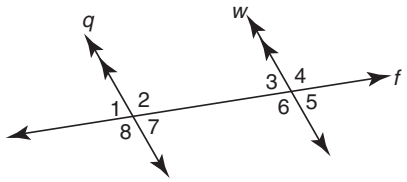
$\triangle MNP \overset{?}{\cong} \triangle PQM$



30) Construct a line that is perpendicular to $\overleftrightarrow{AB}$ and passes through point X.

31) Write the theorem that is illustrated by each statement and diagram.

$\angle 2 \cong \angle 6$



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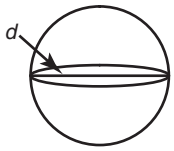
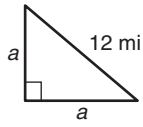
32) Calculate the volume.

d = 16 meters

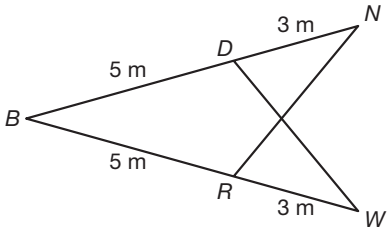


33) Find the missing lengths.



34) Determine whether there is enough information to prove the triangles congruent by SSS or SAS. Write the congruence statement to justify your reasoning.

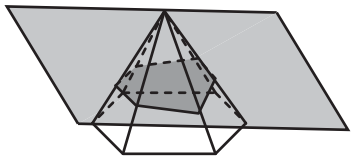
$\triangle BDW \cong \triangle BRN$



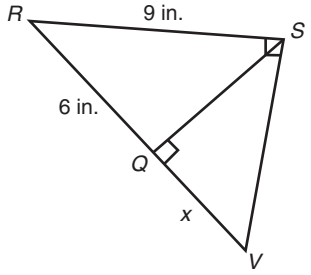
35) The measure of the supplement of an angle is one fourth the measure of the angle. What is the measure of each angle?

36) Construct a line that is perpendicular to $\overline{RS}$ and passes through point W.

37) Describe the cross section.



38) Solve for x.

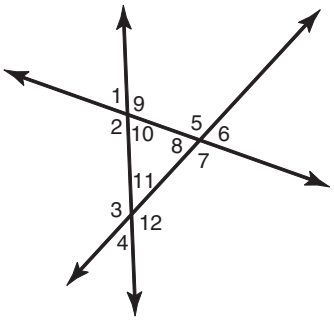


39) Determine the angle measure or side measure that is needed in order to prove that the triangles are congruent by AAS.

In triangle BCD, measure of angle B is 25°, and the measure of angle D is 105°. In triangle RST, $RS = 12$, measure of angle R is 25°, and the measure of angle T is 105°.

40) Construct an equilateral triangle. The length of one side is given.

41) Name all the pairs of vertical angles.



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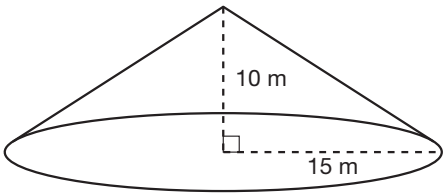
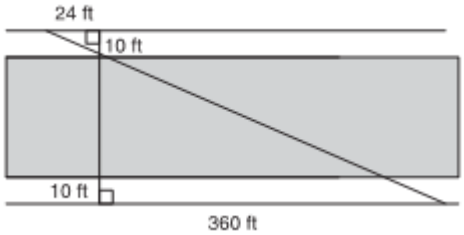
42) Find the volume.



43) In right triangle ABC the hypotenuse AC is 12cm and the leg BC is 6cm. List the angles of the triangle in order from least to greatest.

44) Elly and Jeff are on opposite sides of a canyon that runs east to west, according to the graphic. They want to know how wide the canyon is. Each person stands 10 feet from the edge. Then, Elly walks 24 feet west, and Jeff walks 360 feet east. What is the width of the canyon?

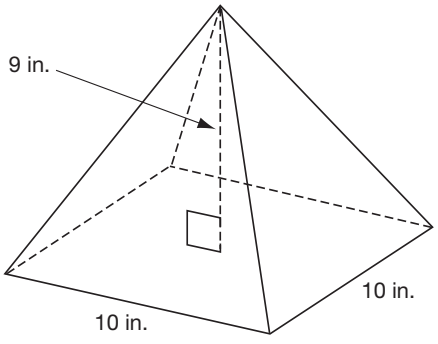


45) Construct a square. The perimeter is given.

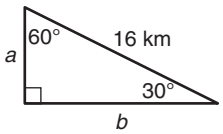
46) Identify the property.

$ED = 3$ in. and $PQ = 3$ in., so $ED = PQ$

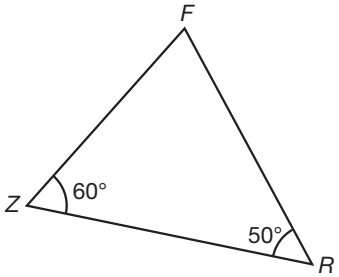
47) Find the volume.

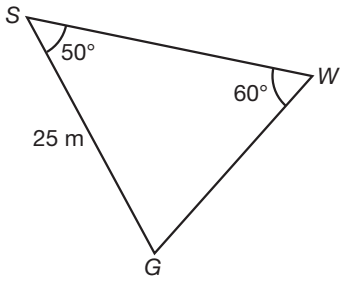


48) Find the missing values.



49) Determine the angle measure or side measure that is needed in order to prove that each set of triangles are congruent by AAS.





50) Determine whether the pair of lines are parallel, perpendicular, or neither? Explain

line p: $y = 3x + 5$

line q: $y = \frac{1}{3}x + 5$

51) State and sketch an example of the following theorems

a. Segment addition postulate
b. Addition Property
c. Congruent Supplements Theorem
d. Definition of a midpoint

52) Define and sketch and example of each type of triangle.

a. Scalene
b. Isosceles
c. Equilateral
d. Right
e. Equiangular
f. Acute
g. Obtuse

53) Determine whether the pair of lines are parallel, perpendicular, or neither. Explain your reasoning.

line p: $y - x = 4$

line q: $2x + y = 8$

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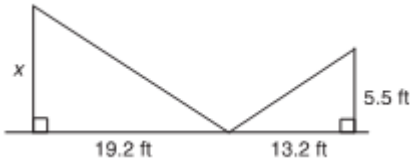
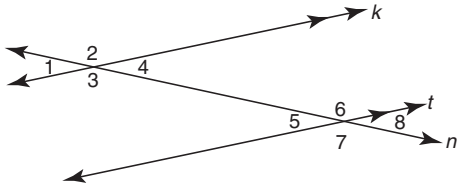
54) Keisha is visiting a museum. She wants to know the height of one of the sculptures. She places a small mirror on the ground between herself and the sculpture, then she backs up until she can see the top of the sculpture in the mirror. What is the height of the sculpture?

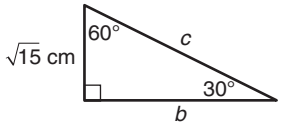


55) Write the theorem that is illustrated by each statement and diagram.

$\angle 1 \cong \angle 8$



56) Find the missing sides.

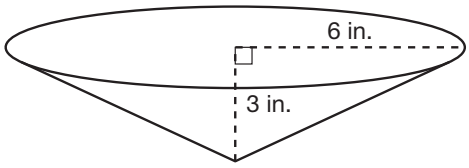


57) Determine whether the lines are parallel, perpendicular, or neither. Explain your reasoning.

line r: $2y + x = 6$

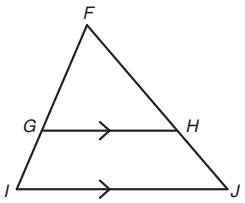
line s: $3x + 6y = 12$

58) Find the volume.



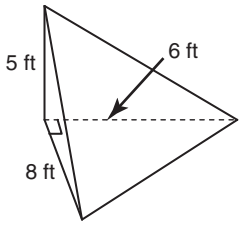
59) What is the equation of a line perpendicular to $y = -\frac{2}{5}x - 1$ that passes through $(2, -8)$?

60) Write a similarity statement and explain.



61) What is the equation of a line parallel to $y = 7x - 8$ that passes through $(5, -2)$?

62) Find the volume.

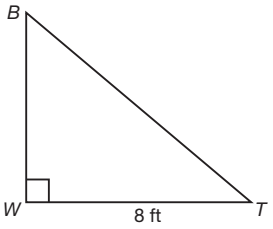


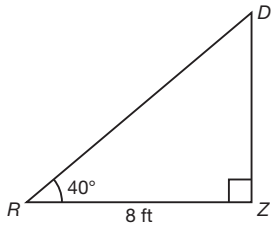
63) Determine the angle measure or side measure that is needed in order to prove that each set of triangles are congruent by ASA.

In triangle CUP, the measure of angle U is $45°$, and the measure of angle P is $55°$. In triangle $HAT, AT = 14$, measure of angle A is $45°$, and the measure of angle T is $55°$.

64) What is the equation of a line perpendicular to $y = -3x + 4$ that passes through $(-1, 6)$?

65) Determine the angle measure or side measure that is needed in order to prove the triangles congruent by ASA.





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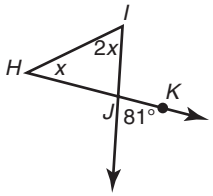
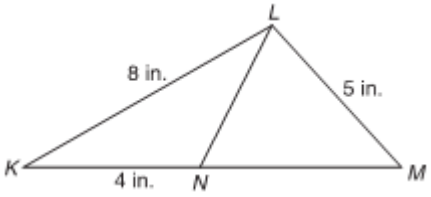
66) Solve for x.



67) Pedro bisects angle ABC. He labels a point on the bisector as D. Angle ABC is 142 degrees. What is the measure of angle ABD?

68) $\overline{LN}$ bisects angle L. Calculate NM.

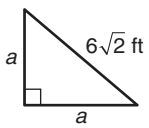


69) Determine whether inductive or deductive reasoning is used.

"Caitlyn has been told that every taxi in New York City is yellow. When she sees a red car in New York City, she concludes that it cannot be a taxi."

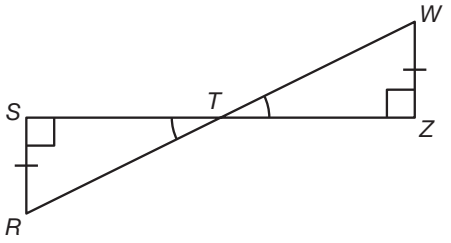
70) Define the following:
- a. Conditional statement
- b. Converse
- c. Inverse
- d. Contrapositive

71) Find x.

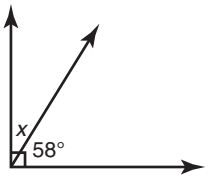


72) Determine whether there is enough information to prove that the triangles are congruent by ASA or AAS. Write the congruence statement to justify your reasoning.

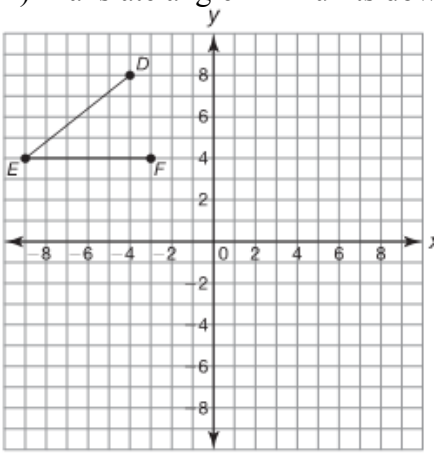
$\triangle RST \stackrel{?}{\cong} \triangle WZT$



73) Find x.



74) Translate angle DEF units down.



75) State and sketch an example of the following theorems
- a. Segment addition postulate
- b. Addition Property
- c. Congruent Supplements Theorem
- d. Definition of a midpoint

Geometry
Final Review

Name: _____
Period: _____

Answer Key

1) $(6, 9)$
2) move all points 12 units down
3) $x = 56°$
4) none
5) $65.4\ cm^3$
6) A: $47.5\ units^2$, P: $40.5\ units$
7) s, r, t, v, u
8) $SP = 13.5\ m$
9) $3630\pi\ yd^3$
10) $(1, 1)$
11) $y = -\frac{1}{2}x - 1$
12) $24\ ft$
13) bisector construction
14) substitution
15) P: $20\ units$, A: $22\ units^2$
16) $\frac{12{,}500}{3} m^3$
17) b, a, c, d, e
18) $x = 6$
19) Yes because $\overline{NQ} \cong \overline{NQ}$ by reflexive
20) $(-5, -1)$
21) reflexive property
22) none
23) copying a segment construction
24) $AP = 4.75$
25) $a = 11, c = 22$
26) Circle
27) inductive
28) P: $27.2\ units$, A: $40\ units^2$
29) Yes, $\overline{MP} \cong \overline{MP}$
30) construction of perp. Lines
31) alt. int. angles thm.
32) $\frac{2084\pi}{3} m^3$
33) $a = 6\sqrt{2}$
34) SAS
35) $144°, 36°$
36) perpendicular constructions
37) hexagon
38) $x = 7.5$
39) No
40) construction of an equilateral triangle
41) $\angle 1$ & $\angle 10, \angle 2,$ & $\angle 9, \angle 3$ & $\angle 12,$ $\angle 4$ & $\angle 11, \angle 5$ & $\angle 7, \angle 6$ & $\angle 8$
42) $750\pi\ m^3$
43) $\overline{BC}, \overline{AB}, \overline{AC}$
44) $140\ ft$
45) construction of a square
46) substitution
47) $300\ in^3$
48) $a = 8, b = 8\sqrt{3}$
49) $FR = 25\ m$
50) neither
51)
52)
53) neither
54) $x = 8$
55) Alt. Ext. angles thm.
56) $b = 3\sqrt{5}, c = 2\sqrt{15}$
57) parallel
58) $36\pi\ in^3$
59) $y = \frac{5}{2}x - 13$
60) $\Delta FGH \sim \Delta FIJ$ by AA ~ thm.
61) $y = 7x - 37$
62) $40ft^3$
63) the length of $\overline{UP}$
64) $y = \frac{1}{3}x + \frac{19}{3}$
65) need to find angle T
66) $x = 27$
67) $m\angle ABD = 71°$
68) $NM = \frac{5}{2} inches$
69) deductive
70)
71) $a = 6$
72) yes by AAS
73) $x = 32°$
74) on graph
75)