Name: _____ Period: _____

FINAL REVIEW ~ UNIT 8: Proportions & Similarity

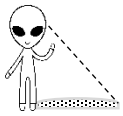
1. Solve each proportion for x.

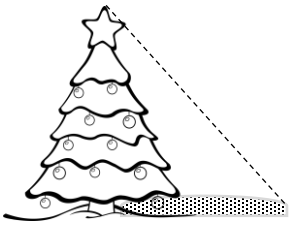
a. $\frac{5}{4} = \frac{x}{20}$ b. $\frac{9}{3} = \frac{x+4}{18}$ c. $\frac{4x-2}{6} = \frac{5x+3}{8}$

d. $\frac{x}{27} = \frac{3}{x}$ e. $\frac{50}{2x} = \frac{x}{16}$ f. $\frac{2x}{15} = \frac{14.4}{3x}$

2. An alien from outer space has stumbled upon a very large tree after landing on earth. The alien is 5.5 ft tall and has an 8 ft shadow. If the tree has a 32 ft shadow, find its height.

LABEL: WORK:





h = _____

3. A car travels 456 miles on 14 gallons of gas. How many gallons of gas does the van need to travel 1,140 miles?

WORK:

Number of gallons = _____

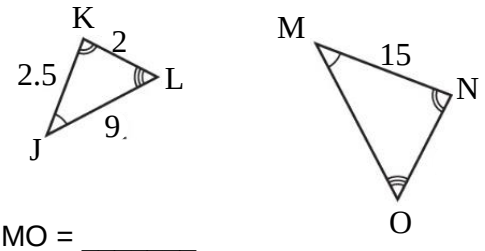
4. A pizzeria makes 4 pizzas every 20 minutes. How many pizzas will the pizzeria make in 75 minutes?

WORK:

Number of Pizzas = _____

5. Given ΔJKL ~ ΔMNO, find MO and the similarity ratio.

WORK:

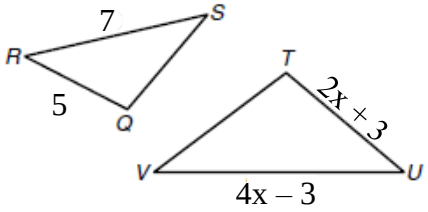


MO = _____

Similarity Ratio = _____

6. Given ΔQRS ~ ΔTUV, find VU and the similarity ratio.

WORK:



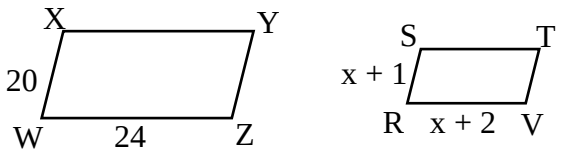
x = _____

VU = _____

Similarity Ratio = _____

7. Given WXYZ ~ RSTV, find RS and the similarity ratio.

WORK:



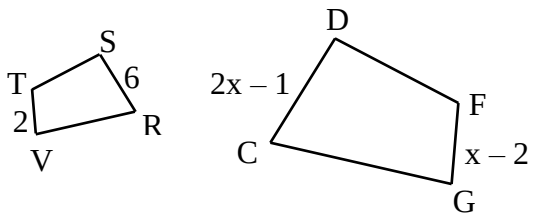
x = _____

RS = _____

Similarity Ratio = _____

8. Given RSTV ~ CDFG, find FG and the similarity ratio.

WORK:



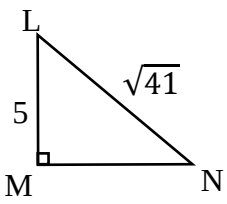
x = _____

DC = _____

Similarity Ratio = _____

FINAL REVIEW ~ UNIT 9: Pythagorean Theorem & Special Right Triangles

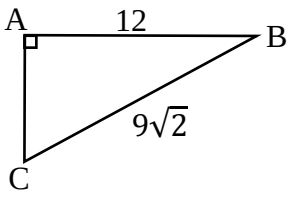
Use the Pythagorean Theorem to find the length of each missing side in <u>simplest radical form</u>.

1. 

WORK:

MN = _____

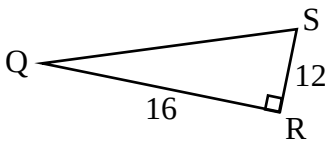
Pythagorean Triple? _____

2. 

WORK:

AC = _____

Pythagorean Triple? _____

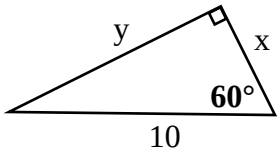
3. 

WORK:

QS = _____

Pythagorean Triple? _____

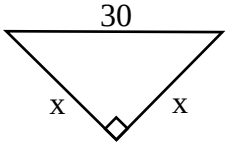
Use Special Right Triangles to find the values of x and y in <u>simplest radical form</u>.

4. 

WORK:

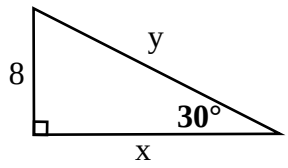
x = _____

y = _____

5. 

WORK:

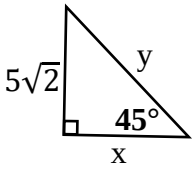
x = _____

6. 

WORK:

x = _____

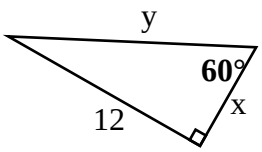
y = _____

7. 

WORK:

x = _____

y = _____

8. 

WORK:

x = _____

y = _____

9. Classify each triangle given its side lengths.

Side lengths: **25, 35, 45** WORK:

A. Acute B. Right C. Obtuse

Side lengths: **11, 50, 51** WORK:

A. Acute B. Right C. Obtuse

Side lengths: **4, 8, $7\sqrt{2}$** WORK:

A. Acute B. Right C. Obtuse

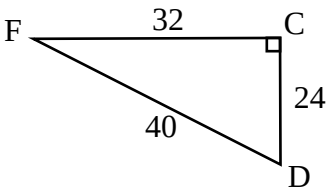
Side lengths: **$5\sqrt{3}$, 10, $5\sqrt{7}$** WORK:

A. Acute B. Right C. Obtuse

FINAL REVIEW ~ UNIT 10: Trigonometry

_____ _____ _____ _____ _____ _____ _____ _____ _____

1. Use ΔCDF to find each ratio. *Round to the nearest hundredth.*



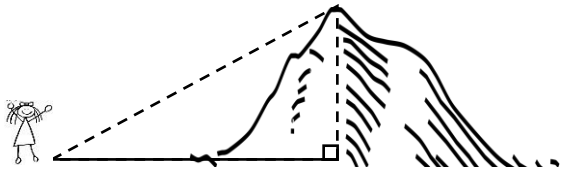
sin∠F = _____ sin∠D = _____

cos∠F = _____ cos∠D = _____

tan∠F = _____ tan∠D = _____

2. The angle of elevation from Sarah to the top of a hill is 49°. If Sarah is 400 horizontal feet from the base of the hill, find the **height** of the hill. *Round to the nearest hundredth.*

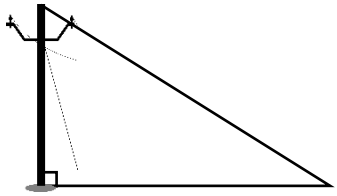
LABEL: WORK:



Height = _____

3. A 12.5 m tall telephone pole casts an 18 m long shadow. Find the **angle of elevation** from the end of the shadow to the top of the telephone pole. *Round to the nearest hundredth.*

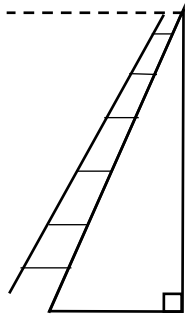
LABEL: WORK:



Angle of Elevation = _____

4. A ladder with an angle of elevation of 78° is 5 horizontal feet from the base of a building. Find the length of the **ladder**. *Round to the nearest hundredth.*

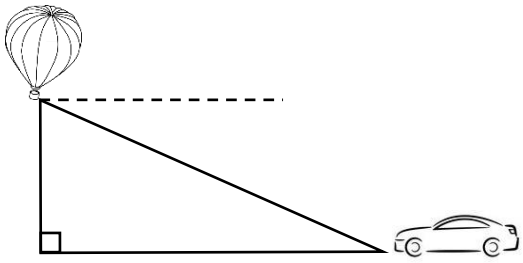
LABEL: WORK:



Length of the Ladder = _____

5. Susie is in a hot-air balloon 340 ft above the ground. She sees her car at an angle of depression of 36°. Determine Susie's **horizontal distance** to her car. *Round to the nearest hundredth.*

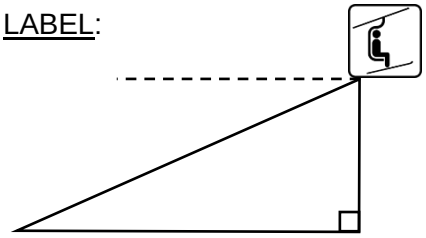
LABEL: WORK:



Horizontal Distance = _____

6. Kate is in a ski lift 208 yards high off the ground. If she has traveled a horizontal distance of 1000 yards, determine her **angle of depression** to the ground. *Round to the nearest hundredth.*

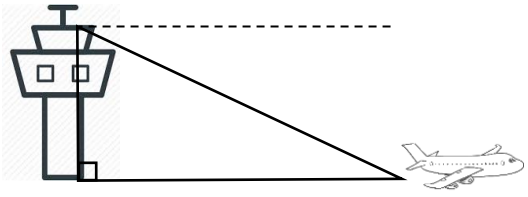
LABEL: WORK:



Angle of Depression = _____

7. An air traffic controller is 120 feet high in his tower. He observes an airplane on the runway at an angle of depression of 19°. Find his **horizontal distance** to the airplane. *Round to the nearest hundredth.*

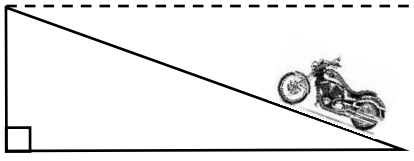
LABEL: WORK:



Horizontal Distance = _____

8. A motorcycle ramp is 5 ft high above the ground and has an angle of elevation of 7°. Find the length of the **ramp**. *Round to the nearest hundredth.*

LABEL: WORK:



Length of the Ramp = _____

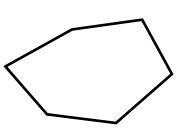
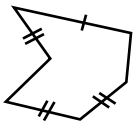
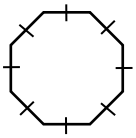
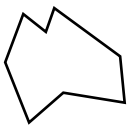
FINAL REVIEW ~ UNIT 11: Polygons

Name the polygon with the given number of sides!

3 = _____ 5 = _____ 7 = _____ 9 = _____

4 = _____ 6 = _____ 8 = _____ 10 = _____

1. Tell whether each polygon is REGULAR / IRREGULAR and CONCAVE / CONVEX.

_____ _____ _____ _____

_____ _____ _____ _____

2. Find the measure of the **SUM** of interior angles for a regular decagon.

SUM of interior = _____ WORK:

3. Find the measure of **ONE** interior angle for a regular 24-gon.

ONE interior = _____ WORK:

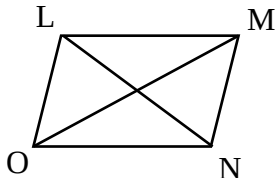
4. Find the measure of **ONE** exterior angle for a regular 30-gon.

ONE exterior = _____ WORK:

5. Given parallelogram LMNO, m∠OLM = (3x – 12)° and m∠NOL = (2x + 7)°, find m∠LMN.

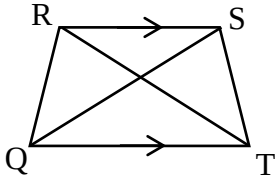
x = _____ LABEL: WORK:

m∠LMN = _____



6. Given isosceles trapezoid QRST, m∠QRS = (3x + 9)° and m∠RST = (6x – 15)°, find x.

x = _____ LABEL: WORK:

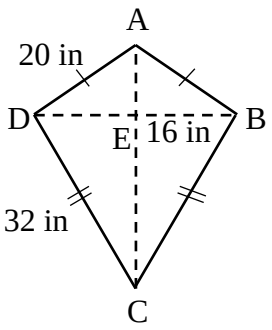


7. Given kite ABCD, find AC. LABEL: WORK:

AE = _____

EC ≈ _____

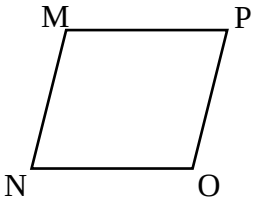
AC = _____



8. Given rhombus MNOP, MN = 4x – 1 and NO = 3x + 12, find OP.

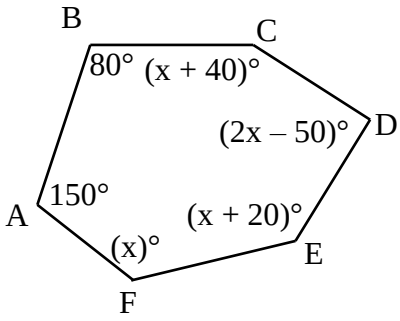
x = _____ LABEL: WORK:

OP = _____



9. Given the hexagon, find m∠C.

WORK:

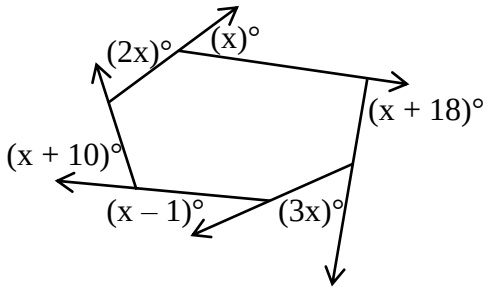


x = _____

m∠C = _____

10. Given the hexagon, find x.

WORK:

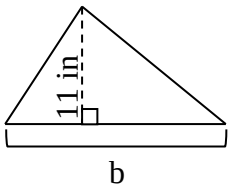


x = _____

FINAL REVIEW ~ UNIT 12: 2D Figures (Area & Perimeter)

1. Given an area of 118.25 in^2 for the triangle, find b.

   b = _____



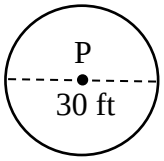
   WORK:

2. Find the circumference and area of ⊙P. *Express answer in terms of π.*

   r = _____

   Circumference = _____

   Area = _____



   WORK:

3. Given the area of a circle is 49π ft^2, find its circumference. *Express answer in terms of π.*

   r = _____

   Circumference = _____

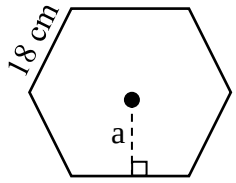
   WORK:

4. Find the area of the regular hexagon. *Round to the nearest hundredth.*

   a ≈ _____

   P = _____

   Area = _____



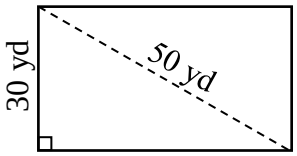
   WORK:

5. Find the area of the rectangle.

   b = _____

   h = _____

   Area = _____

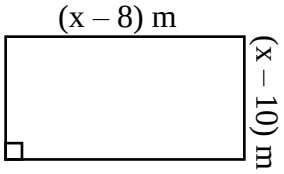


   WORK:

6. Find the perimeter and area of the rectangle. *Express answer in terms of x.*

   Perimeter = _____

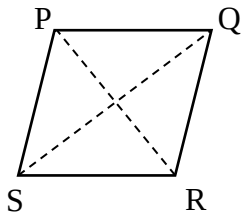
   Area = _____



   WORK:

7. Given PR = (x + 4) in and QS = (x – 15) in, find the area of the rhombus. *Express answer in terms of x.*

Area = _____



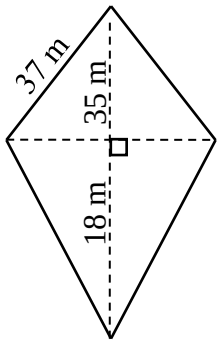
WORK:

8. Find the area of the kite.

d_1 = _____

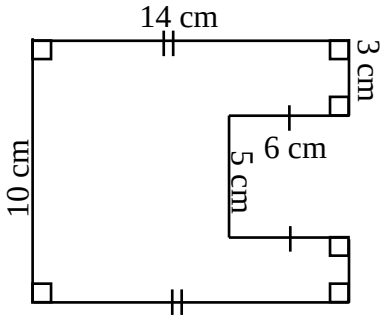
d_2 = _____

Area = _____



WORK:

9. Find the perimeter and area of the composite figure.

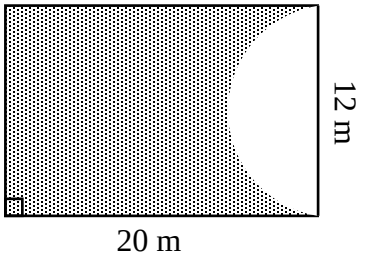


WORK:

Perimeter = _____

Area = _____

10. Find the area of the shaded region. *Round to the nearest hundredth, if necessary.*



WORK:

Area of 1st Figure = _____

Area of 2nd Figure = _____

Area of Shaded Region = _____

FINAL REVIEW ~ UNIT 13: 3D Figures (Surface Area & Volume)

1. Match each net with its solid.

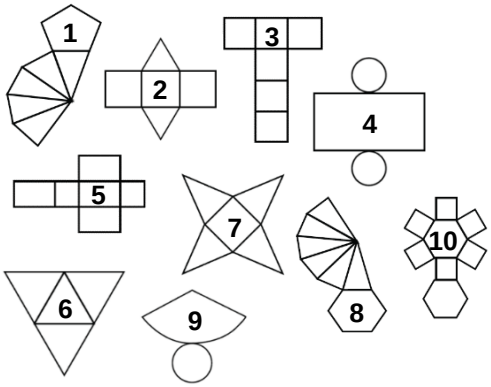
1 → _____ 6 → _____

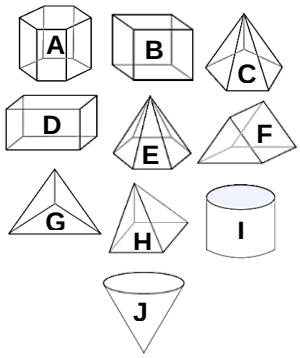
2 → _____ 7 → _____

3 → _____ 8 → _____

4 → _____ 9 → _____

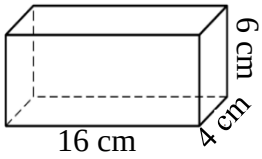
5 → _____ 10 → _____





Find the SURFACE AREA of each figure.

3. **Rectangular Prism** WORK



P = _____

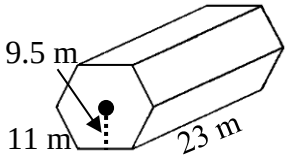
h = _____

B = _____

L = _____

Surface Area = _____

4. **Regular Hexagonal Prism** WORK



P = _____

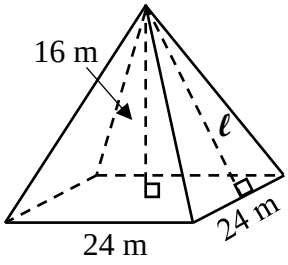
h = _____

B = _____

L = _____

Surface Area = _____

5. **Square Pyramid** WORK:



ℓ = _____

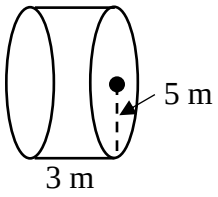
P = _____

B = _____

L = _____

Surface Area = _____

6. **Cylinder** WORK



r = _____

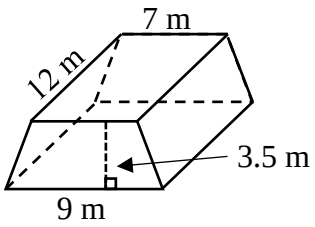
h = _____

L = _____

Surface Area = _____

Find the VOLUME of each figure.

7. **Trapezoidal Prism** WORK

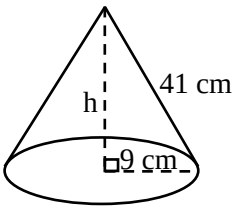


B = _____

h = _____

Volume = _____

8. **Cone** WORK

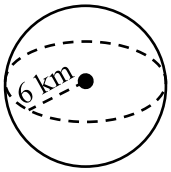


r = _____

h = _____

Volume = _____

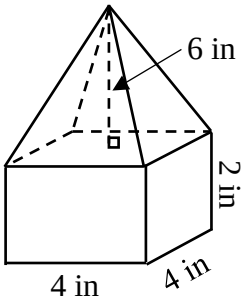
9. **Sphere** WORK



r = _____

Volume = _____

10. **Composite Figure** WORK

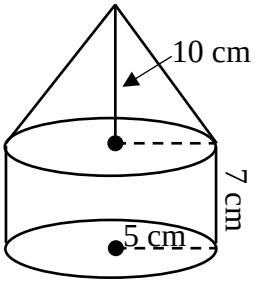


V of 1st Figure = _____

V of 2nd Figure = _____

Total Volume = _____

11. **Composite Figure** WORK



V of 1st Figure = _____

V of 2nd Figure = _____

Total Volume = _____