

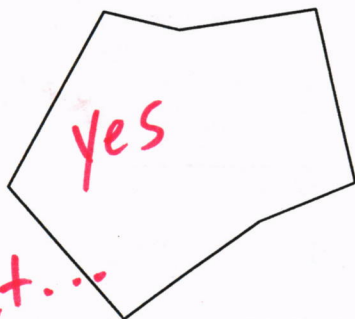
Name: _____

Chapter 6 Review
Semester 2 Final Exam

1. Complete the statement.
A polygon is a plane figure that is formed by three or more segments called sides. Each side intersects exactly ? other sides at each of its endpoints. Each endpoint is a ? of the polygon.

[A] two, vertex [B] three, vertex
[C] two, side [D] three, side

2. Decide whether the figure is a polygon. If so, tell what type. If not, explain why.

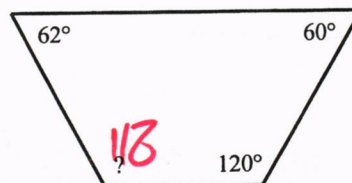


but...
Not convex

3. Name a polygon with 8 sides.

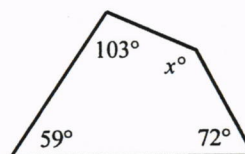
[A] decagon [B] quadrilateral
[C] octagon [D] triangle

4. Find the measure of the missing angle.



[A] 118° [B] 62°
[C] 120° [D] 60°

5. Use the information in the diagram to solve for x . The diagram is not to scale.

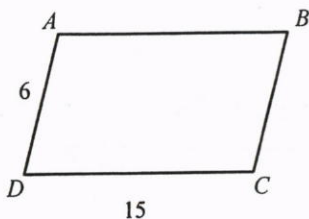


[A] 36 [B] 81
[C] 126 [D] 216

6. If a quadrilateral is a parallelogram, then its consecutive angles are ? .

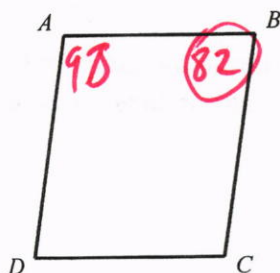
[A] congruent [B] supplementary
[C] complementary [D] equal

7. In parallelogram $ABCD$, find BC .

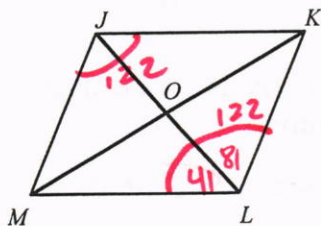


- [A] 21 [B] 9 [C] 15 [D] 6

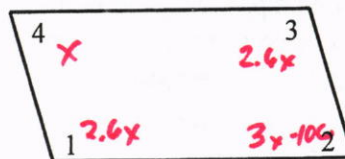
8. $ABCD$ is a parallelogram. If $m\angle DAB = 98^\circ$, then $m\angle ABC = \underline{\hspace{1cm}}$.



9. In the parallelogram, $m\angle KLO = 81^\circ$ and $m\angle MLO = 41^\circ$. Find $m\angle KJM$.



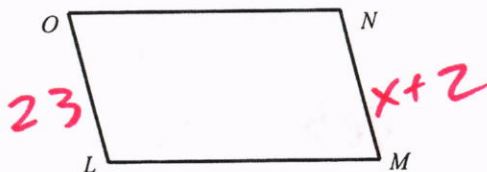
10. For the parallelogram below, if $m\angle 1 = m\angle 3 = (2.6x)^\circ$, $m\angle 2 = (3x - 100)^\circ$, and $m\angle 4 = x^\circ$, find the value of x . The diagram is not to scale.



$$\begin{aligned} x &= 3x - 100 \\ -2x &= -100 \\ x &= 50 \end{aligned}$$

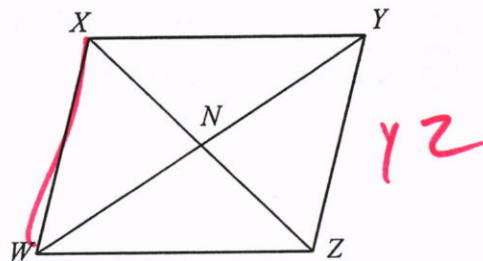
- [A] 100 [B] 50 [C] 40 [D] 80

11. If $NM = x + 2$ and $OL = 23$, find the value of x given that $LMNO$ is a parallelogram. The diagram is not to scale.



- [A] $x = 21$ [B] $x = 25$
[C] $x = 42$ [D] $x = 10.5$

12. Match the segment in parallelogram $WXYZ$ with a congruent one.
 \overline{WX}



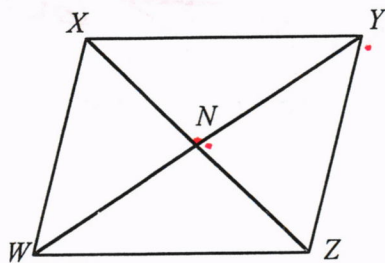
- [A] \overline{WN} [B] \overline{WZ}
[C] \overline{YZ} [D] \overline{NZ}

13. Complete the statement.

If both pairs of opposite sides of a quadrilateral are ? , then the quadrilateral is a parallelogram.

- [A] adjacent [B] perpendicular
[C] congruent [D] none of these

14. Which statement can be used to show that quadrilateral $XYZW$ is a parallelogram?



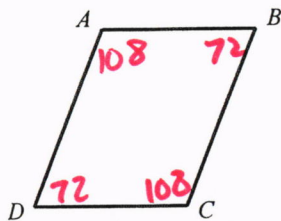
~~[A]~~ $\overline{XW} \cong \overline{WZ}$ and $\overline{XY} \cong \overline{YZ}$

~~[B]~~ $\overline{XN} \cong \overline{YN}$ and $\overline{WN} \cong \overline{ZN}$

[C] N is the midpoint of \overline{XZ} and \overline{WY} . *Diagonals bisect each other ✓*

~~[D]~~ $XW = WZ$ and $XY = YZ$

15. If $m\angle A = m\angle C = 108^\circ$, find $m\angle B$ so that quadrilateral $ABCD$ is a parallelogram.



[A] 18°

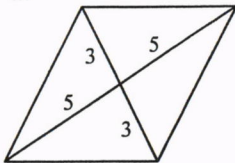
[B] 72°

[C] 162°

[D] 108°

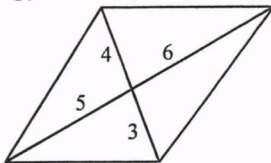
16. Tell whether the quadrilateral is a parallelogram.

a.



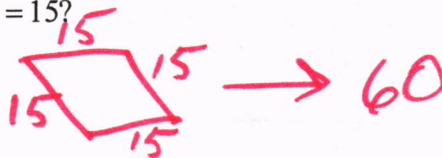
Yes diagonals bisect

b.



No diagonals don't bisect

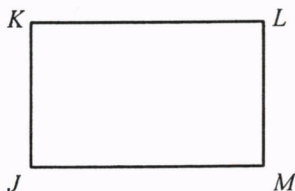
17. What is the perimeter of a rhombus $ABCD$ given $AB = 15$?



Find the measure.

18.

rectangle $JKLM$



[A] 90°

[B] 45°

[C] 180°

[D] 360°

$m\angle L = \underline{90}$ (def rectangle)

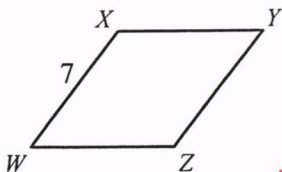
19. rhombus $WXYZ$

[A] 14

[B] 3.5

[C] 28

[D] 7



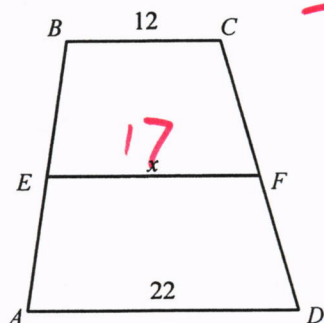
$YZ = \underline{7}$ *D all sides the same*

Complete the statement.

20. The midsegment of a trapezoid is the segment that connects the midpoints of its legs.

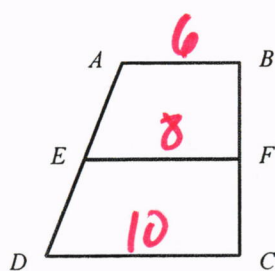
21. If a trapezoid is isosceles, then each pair of base angles is congruent.

22. In the figure shown, \overline{EF} is the midsegment of trapezoid $ABCD$. Find the value of x .



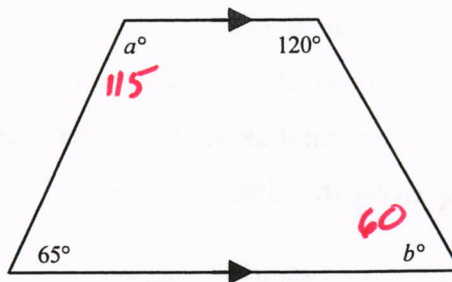
$$\frac{22+12}{2} = 17$$

23. Given: Trapezoid $ABCD$ with midsegment \overline{EF} . If $AB = 6$ and $EF = 8$, find the length of \overline{DC} .



going up
by 2

24. Find the values of a and b .

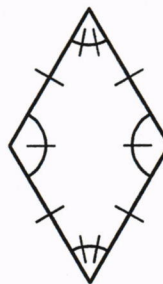


- [A] $a = 65, b = 30$
 [B] $a = 115, b = 60$
 [C] $a = 115, b = 30$
 [D] $a = 65, b = 60$

25. What type of quadrilateral is defined as having two pairs of parallel sides?

- [A] parallelogram [B] trapezoid
 [C] rhombus [D] rectangle

26. Classify the figure in as many ways as possible.



4 sides quadrilateral
 4 congruent sides
 Rhombus
 opposite angles congruent
 parallelogram

- [A] trapezoid, quadrilateral
 [B] quadrilateral, parallelogram
 [C] rectangle, quadrilateral
 [D] quadrilateral, parallelogram, rhombus

27. Which statement is true?

- ☐ [A] Every rectangle is a square.
- ☒ [B] Every square is a rhombus.
- ☐ [C] Every parallelogram is a rhombus.
- ☐ [D] Every rhombus is a square.

28. Select the geometric figure that possesses all of the following characteristics:

- i. polygon
- ii. quadrilateral
- iii. exactly two sides are parallel

- ☐ [A] parallelogram
- ☒ [B] trapezoid
- ☐ [C] square
- ☐ [D] rhombus

GEOMETRY
Chapter 7 Review
Semester 2 Final Exam

Name _____ Per _____

For 1-2, Solve the proportions for x.

1. $\frac{2}{x} = \frac{15}{90}$

x = 12

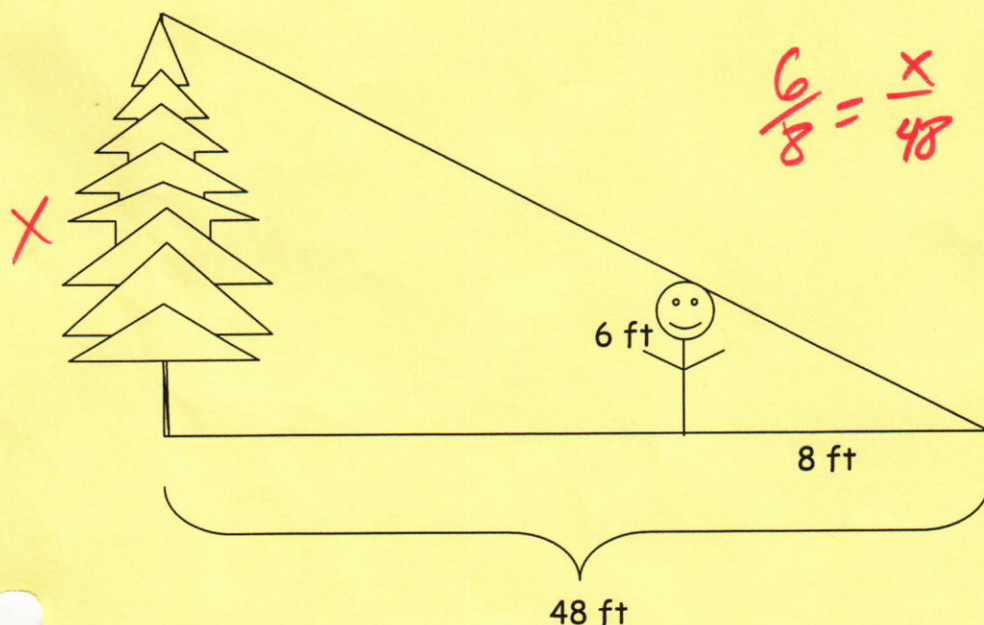
2. $\frac{2x+3}{6} = \frac{9x-5}{12}$

$$\begin{aligned} 12(2x+3) &= 6(9x-5) \\ 24x+36 &= 54x-30 \\ -24x &\quad -24x \\ \hline 36 &= 30x-30 \\ +30 &\quad +30 \\ 66 &= 30x \\ x &= \underline{2.2} \end{aligned}$$

3. Reduce this ratio : $\frac{3\text{nickels}}{1\text{quarter}} =$

~~3 nickels~~ $\frac{15\text{cents}}{25\text{cents}} = \frac{3}{5}$

4. Tom Jones wanted to find the height of a tree he could not measure. So he stood in the shadow of the tree to gather some information. Tom is 6 feet tall, and his shadow was 8 feet long. The tree cast a shadow of 48 feet. Using proportions, find the height of the tree.



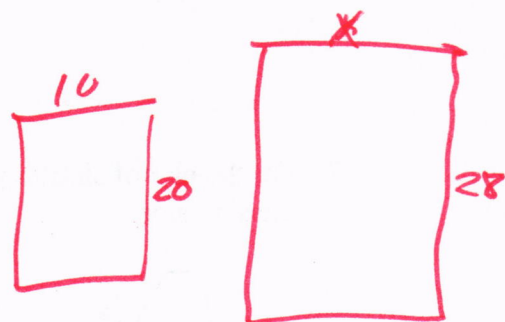
$$\frac{6}{8} = \frac{x}{48}$$

Tree = 36 ft

Name: _____

Chapter 7 Review

Semester 2 Final Exam



1. Solve the proportion. $\frac{2}{3} = \frac{k+8}{54}$

[A] 44 [B] 1 [C] 24 [D] 28

$$108 = 3k + 24$$
$$28 = k$$

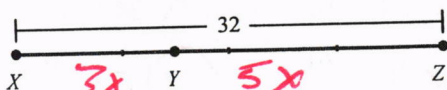
2. Which shows the following ratio simplified?

120 apples to 12 oranges

[A] $\frac{10}{1}$ [B] $\frac{120}{12}$

[C] $\frac{12}{120}$ [D] $\frac{1}{10}$

3. In the diagram, $XY:YZ$ is $3:5$ and $XZ = 32$. Find XY and YZ .



[A] $XY = 24$; $YZ = 40$

[B] $XY = 20$; $YZ = 12$

[C] $XY = 12$; $YZ = 20$

[D] $XY = 3$; $YZ = 5$

$$3x + 5x = 32$$

$$8x = 32$$

$$x = 4$$

4. Write $\frac{99}{24}$ in simplest form.

$$\frac{33}{8}$$

divide top
& bottom
by 3

5. A photo lab technician has a display ad that is 10 centimeters by 20 centimeters. The ad needs to be enlarged so the longer side is 28 centimeters. How long will the shorter side be after the enlargement?

[A] 18 cm

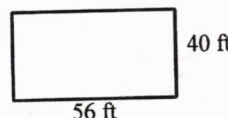
[B] 38 cm

[C] 56 cm

[D] 14 cm

$$\frac{20}{28} = \frac{10}{x}$$

6. Find the ratio of the length to the width of the rectangle. Then simplify the ratio.



$$\frac{56}{40} = \frac{7}{5}$$

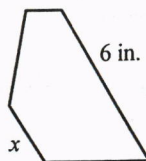
[A] $\frac{4}{40}$

[B] $\frac{56}{40}$

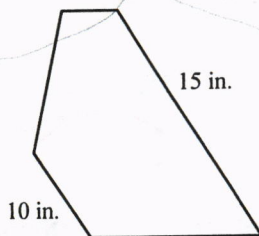
[C] $\frac{2}{5}$

[D] $\frac{7}{5}$

7. For the pair of similar polygons, find the missing side.



$$\frac{6}{15} = \frac{x}{10}$$



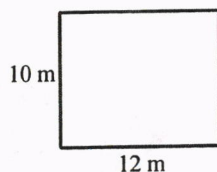
[A] 6 in.

[B] 4 in.

[C] 7 in.

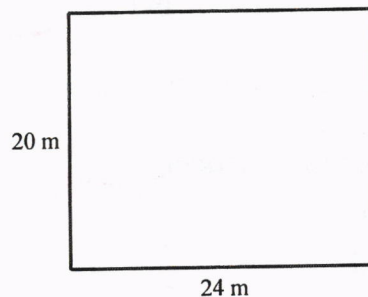
[D] 3 in.

8. The two rectangles are similar.



$$\frac{10}{20} = \frac{1}{2}$$

$$\frac{12}{24} = \frac{1}{2}$$



Which is a correct proportion between corresponding sides?

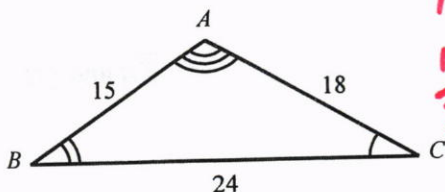
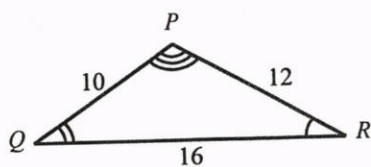
~~[A]~~ $\frac{12}{24} = \frac{20}{10}$

~~[B]~~ $\frac{12}{24} = \frac{10}{44}$

~~[C]~~ $\frac{12}{10} = \frac{20}{24}$

[D] $\frac{12}{24} = \frac{10}{20}$

9. Determine if the triangles are similar. If they are similar, write a similarity statement and find the scale factor of $\triangle ABC$ to $\triangle PQR$.



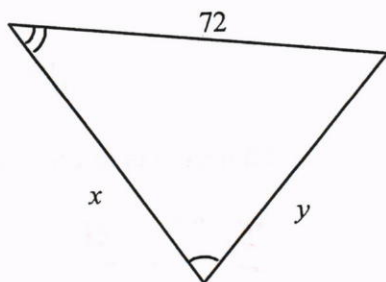
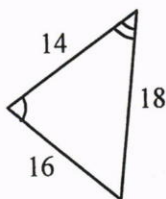
$$\frac{10}{15} = \frac{2}{3}$$

$$\frac{12}{18} = \frac{2}{3}$$

$$\frac{16}{24} = \frac{2}{3}$$

$$\triangle PQR \sim \triangle ABC$$

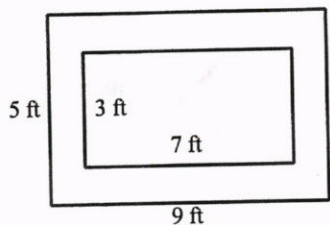
10. Find the value of each variable.



$$\frac{72}{18} = \frac{x}{14} \quad x = 56$$

$$\frac{72}{18} = \frac{y}{16} \quad y = 64$$

11. Find the ratio of the perimeter of the larger rectangle to the perimeter of the smaller rectangle.



$$\text{Big : } 28$$

$$\text{Small : } 20 = \frac{7}{5}$$

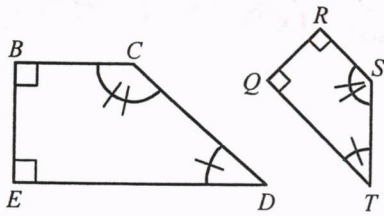
[A] $\frac{9}{7}$

[B] $\frac{7}{5}$

[C] $\frac{5}{3}$

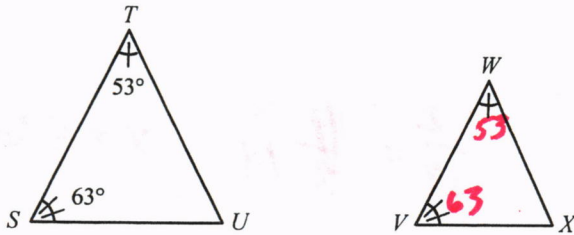
[D] $\frac{5}{7}$

12. Quadrilateral $EBCD \sim$ Quadrilateral $QRST$.
Which is a pair of corresponding sides?



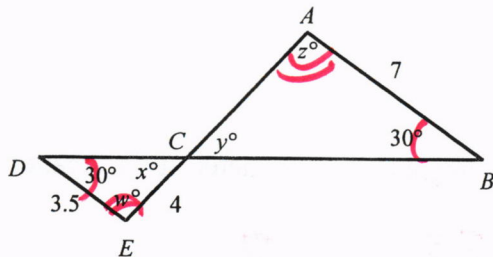
- [A] \overline{CD} and \overline{ST} [B] \overline{ED} and \overline{RS} [C] \overline{BC} and \overline{ST} [D] \overline{EB} and \overline{QT}

13. $\triangle STU \sim \triangle VWX$.
What is the measure of $\angle X$?



- [A] 64° [B] 244° [C] 32° [D] 116°

14. Which statement is true for the pictured triangles? The diagram is not to scale.



$$\frac{3.5}{7} = \frac{4}{AC}$$

$$AC = 8$$

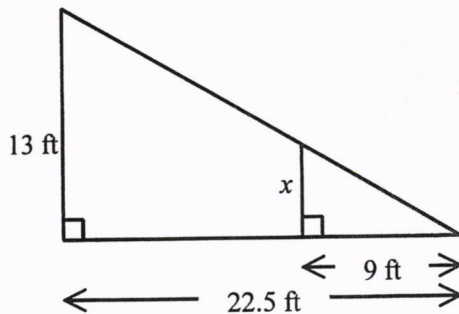
[A] $x = 30$

[B] $AC = 8.0$

[C] $\frac{CE}{CA} = \frac{CB}{CD}$

[D] $z \neq w$

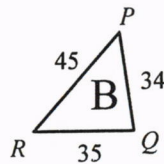
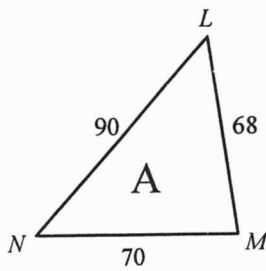
15. Use similar triangles to find x .



$$\frac{9}{22.5} = \frac{x}{13}$$

5.2

16. Determine whether the two triangles are similar. If they are similar, write a similarity statement and find the scale factor of Triangle B to Triangle A.



$$\frac{90}{45} = \frac{2}{1}$$

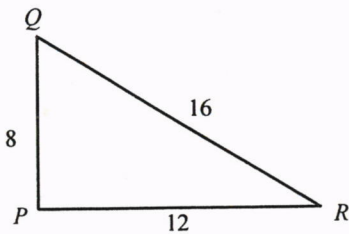
$$\frac{68}{34} = \frac{2}{1}$$

$$\frac{70}{35} = \frac{2}{1}$$

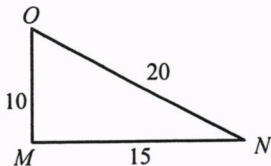
$$\triangle LMN \sim \triangle PQR$$

S.f.: $\frac{1}{2}$

17. Are the two triangles similar? If so, state the postulate or theorem that justifies your answer.



S.f. $\frac{4}{5}$



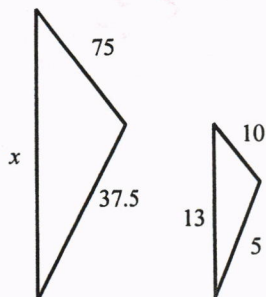
[A] SSS Similarity Theorem

[C] SAS Similarity Theorem

[B] AA Similarity Postulate

[D] not similar

18. The triangles below are similar. Find the value of x . The diagram is not to scale.



$$\frac{75}{10} = \frac{x}{13}$$

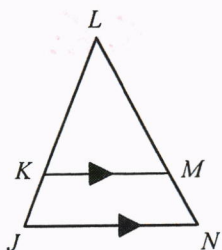
[A] 97.5

[B] 105

[C] 1.7

[D] 48.8

19. In $\triangle JLN$, if $\overline{KM} \parallel \overline{JN}$, then ____.



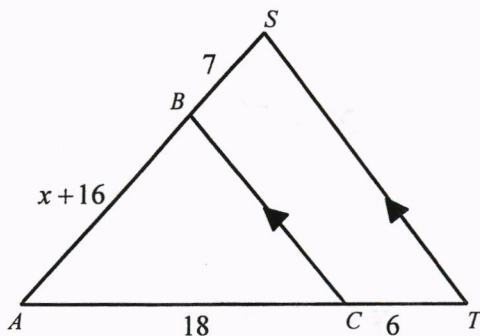
[A] $\frac{LK}{KJ} = \frac{LM}{MN}$

[B] $\frac{LM}{LK} = \frac{KJ}{MN}$

[C] $\frac{LK}{LM} = \frac{MN}{KJ}$

[D] $\frac{LM}{KJ} = \frac{LK}{MN}$

20. Find the value of x . The diagram is not to scale.

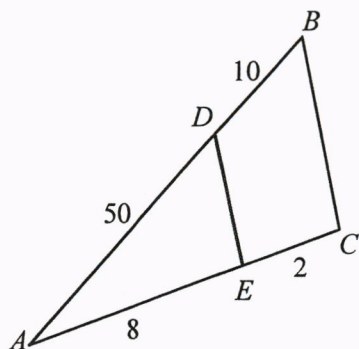


$$\frac{x+16}{7} = \frac{18}{6}$$

$$x+16 = 21$$

$$x = 5$$

21. Given the diagram, determine whether \overline{BC} is parallel to \overline{DE} . The diagram is not drawn to scale.

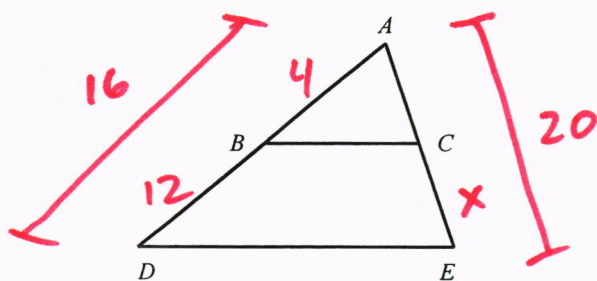


$$\frac{50}{10} = \frac{5}{1}$$

$$\frac{8}{2} = \frac{4}{1}$$

No.

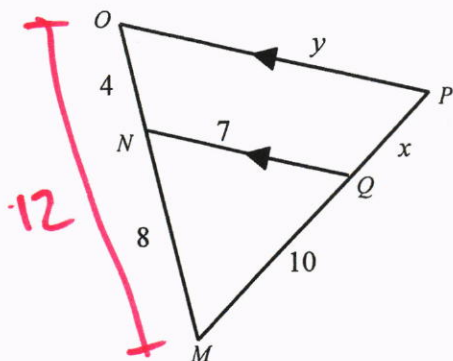
22. In the figure shown, $\overline{BC} \parallel \overline{DE}$, $AB = 4$ yards, $BD = 12$ yards, and $AE = 20$ yards. Find CE . The diagram is not to scale.



$$\frac{12}{16} = \frac{x}{20}$$

$$x = 15$$

23. Find the value of each variable. The diagram is not to scale.



$$\frac{4}{8} = \frac{x}{10}$$

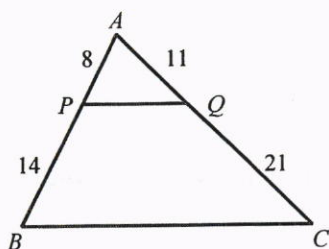
$$x = 5$$

$$\frac{8}{12} = \frac{7}{y}$$

$$y = 10.5$$

- [A] $x = 10.5$; $y = 5$
 [B] $x = 7$; $y = 10.5$
☒ [C] $x = 5$; $y = 10.5$
 [D] $x = 10$; $y = 7$

24. In the figure shown (not drawn to scale),
 is $\overline{PQ} \parallel \overline{BC}$?

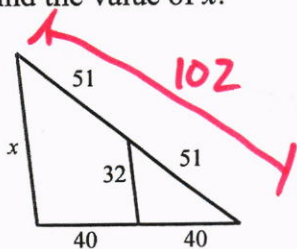


$$\frac{8}{14} = \frac{11}{21}$$

$$\frac{11}{21} = \frac{11}{21}$$

No.

25. Find the value of x .



$$\frac{51}{102} = \frac{32}{x}$$

- [A] 45.5 [B] 32
☒ [C] 64 [D] 40

GEOMETRY
Chapter 8 Review
Semester 2 Final Exam

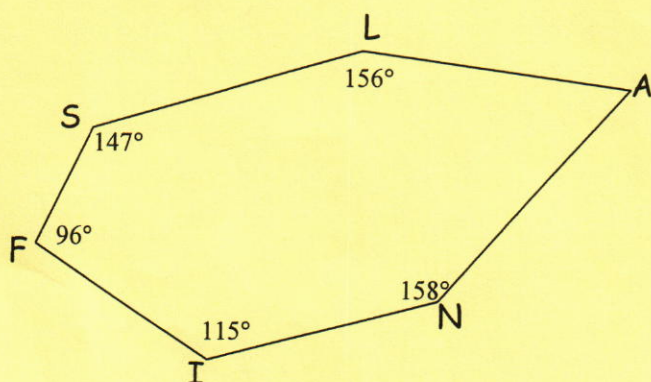
Name _____ Per _____

1. What is the sum of the interior angles of a pentagon? 540

$$(5-2) \cdot 180$$

2. What is the sum of the exterior angles of an octagon? 360

3. Find the missing angle measure, $\angle A$, in the diagram.

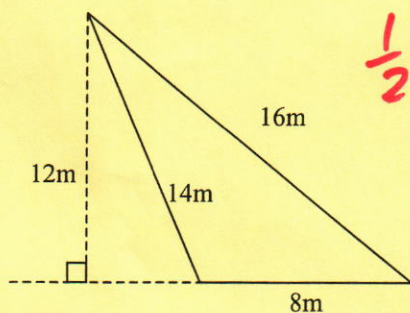


$$(6-2) \cdot 180 = 720$$

$$m\angle A = \underline{48}$$

4. Calculate the area of the figures.

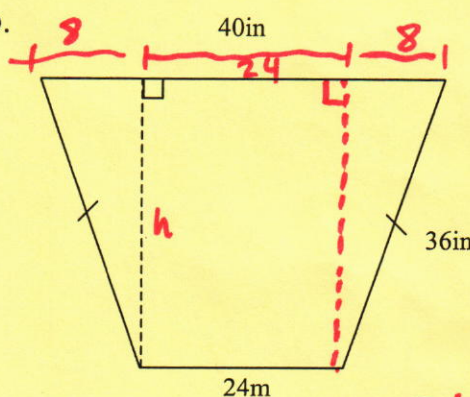
a.



$$\frac{1}{2} \cdot 8 \cdot 12$$

$$\text{Area} = \underline{48}$$

b.



$$8^2 + h^2 = 36^2$$

$$h = 35.1$$

(hint: find the height first)

$$\frac{40+24}{2} \cdot 35.1$$

$$\text{Area} = \underline{1123.2}$$

Name: _____

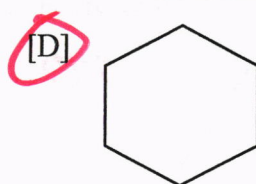
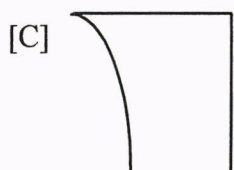
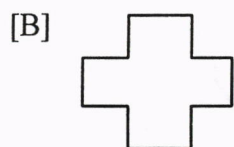
Chapter 8 Review
Semester 2 Final Exam

1. Complete the statement.

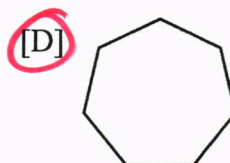
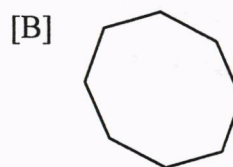
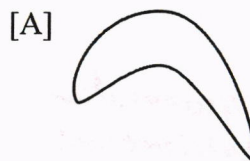
A polygon is ____ if no line that contains a side of the polygon passes through the interior of the polygon.

- [A] regular [B] convex
[C] concave [D] irregular

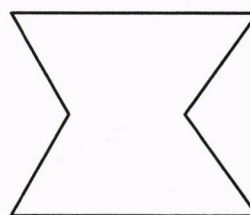
2. Identify the convex polygon.



3. Which figure appears to be a regular heptagon?



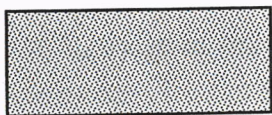
4. Does the polygon appear to be regular or not regular?



*Not
(angles are not
the same)*

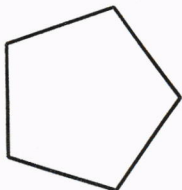
Choose the word or words from the following list to describe the polygon: equilateral, equiangular, convex, concave, regular.

5.



*equiangular
convex*

6.



*equiangular
equilateral
regular
convex*

7. The sum of the interior angles of a regular quadrilateral is 360° . What is the measure of each angle? *Rectangle*

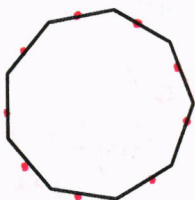
[A] 120°

[B] 72°

[C] 90°

[D] 180°

8. Find the sum of the measures of the interior angles in the regular polygon.



*9 sides
(9-2) · 180*

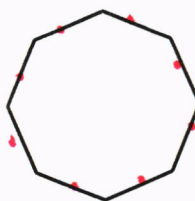
[A] 1620°

[B] 810°

[C] 630°

[D] 1260°

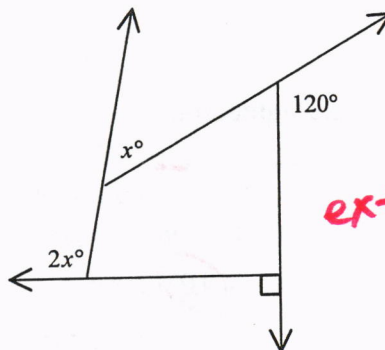
9. Find the measure of an interior angle in the regular polygon.



*8 sides
(8-2) · 180
1080*

10. Find the value of x .

$$x + 2x + 120 + 90 = 360$$



*exterior
add to
360*

[A] 150

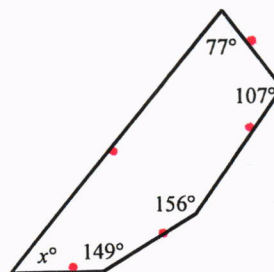
[B] 120

[C] 50

[D] 60

11. Find the value of x .

$$(5-2) \cdot 180 = 540$$



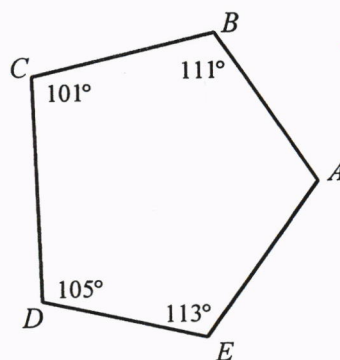
[A] 51

[B] 39

[C] 90

[D] 45

12. Find the measure of $\angle A$ in the diagram.



540

[A] 290°

[B] 70°

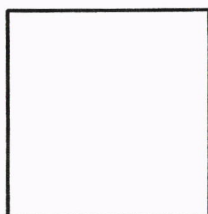
[C] 110°

[D] 220°

13. The sum of the measures of nine exterior angles of a decagon is 305° . What is the measure of the tenth exterior angle?

55

14. Find the area of the square.

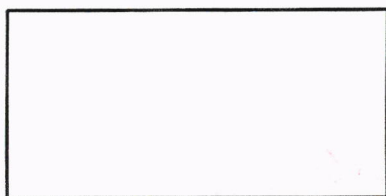


10 ft

10 x 10

- [A] 90 ft^2 [B] 20 ft^2
[C] 100 ft^2 [D] 5 ft^2

15. What is the area of the rectangle below?

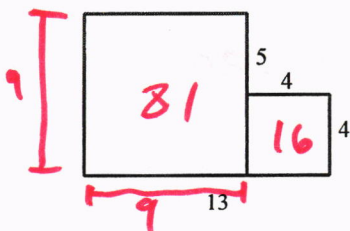


7 cm

14 cm

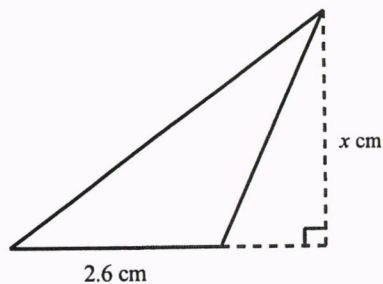
- [A] 98 cm^2 [B] 21 cm^2
[C] 196 cm^2 [D] 42 cm^2

16. Find the area of the polygon made up of rectangles.



- [A] 185 ft^2 [B] 44 ft^2
[C] 97 ft^2 [D] 13 ft^2

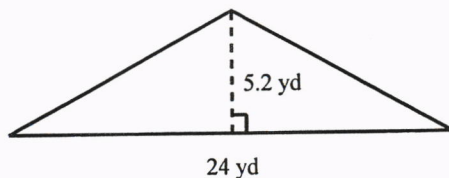
17. Find the value of x if the area is 4.03 square centimeters. The diagram is not to scale.



$$\frac{1}{2} \cdot 2.6 \cdot x = 4.03$$

$$x = 3.1$$

18. Find the area.



$$\frac{1}{2} \cdot 5.2 \cdot 24$$

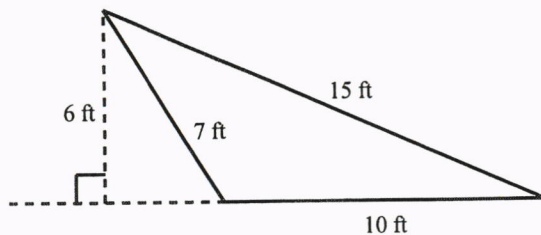
[A] 29.2 yd^2

[B] 62.4 yd^2

[C] 65 yd^2

[D] 124.8 yd^2

19. Find the area of the triangle. The diagram is not to scale.



$$\frac{1}{2} \cdot 10 \cdot 6$$

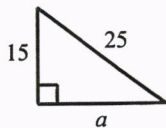
[A] 60 ft^2

[B] 90 ft^2

[C] 150 ft^2

[D] 30 ft^2

20. Find the area of the triangle.



$$15^2 + a^2 = 25^2$$

$$a = 20$$

$$\frac{1}{2} \cdot 15 \cdot 20$$

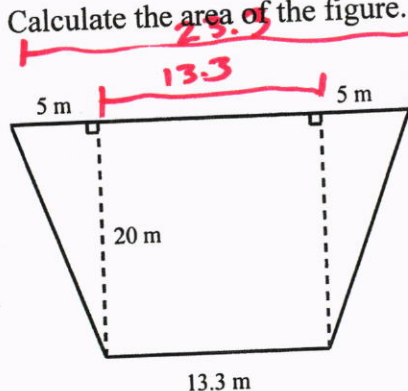
[A] 313 square units

[C] 150 square units

[B] 300 square units

[D] 60 square units

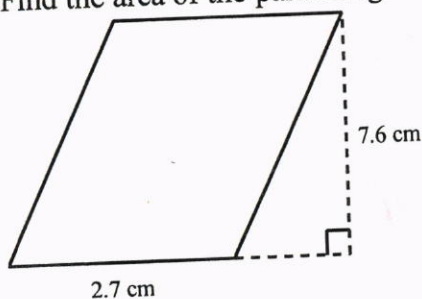
21. Calculate the area of the figure. The diagram is not to scale.



$$\frac{23.3 + 13.3}{2} \cdot 20$$

- [A] 466 m^2 [B] 333 m^2 [C] 114.9 m^2 [D] 366 m^2

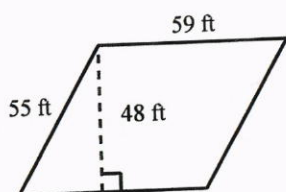
22. Find the area of the parallelogram. The diagram is not to scale.



$$2.7 \times 7.6$$

- [A] 20.52 cm^2 [B] 21.87 cm^2 [C] 61.56 cm^2 [D] 22.62 cm^2

23. Find the area of the parallelogram. The diagram is not to scale.

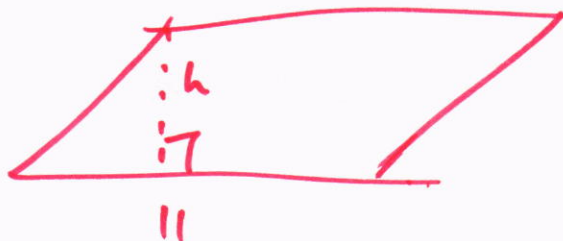


$$59 \times 48 = 2832 \text{ ft}^2$$

24. A parallelogram has a base of 11 feet and an area of 143 square feet. Find the height.

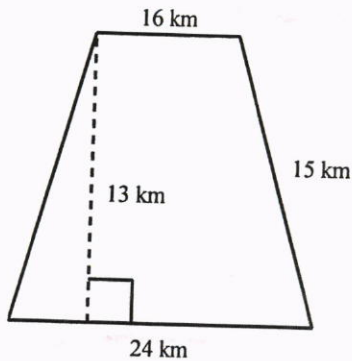
- [A] 24 ft [B] 6.5 ft [C] 13 ft [D] 26 ft

$$11h = 143$$



Find the area of the trapezoid. The diagram is not to scale.

25.



$$\frac{16+24}{2} \cdot 13$$

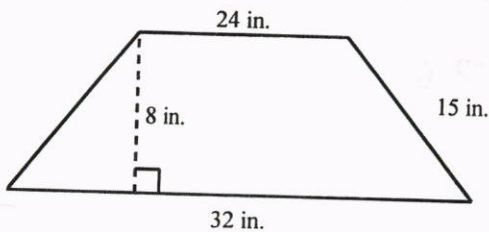
[A] 520 km²

[B] 300 km²

[C] 600 km²

[D] 260 km²

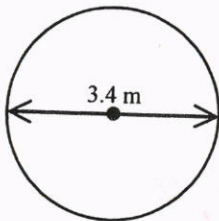
26.



$$\frac{24+32}{2} \cdot 8$$

$$224$$

27. Find the area. Use $\pi \approx 3.14$.



$$A = \pi r^2$$

[A] 145.194 m²

[B] 36.2984 m²

[C] 9.0746 m²

[D] 21.352 m²

28. A circle has area 225π cm². What is the diameter?

[A] 30π cm

[B] $50,625\pi$ cm

[C] 30 cm

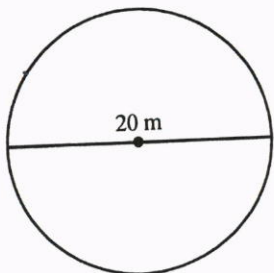
[D] 15 cm

$$\pi r^2 = 225\pi$$

$$r^2 = 225$$

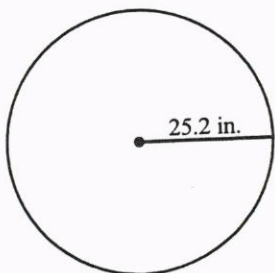
$$r = 15 \longrightarrow D = 30$$

29. Find the circumference and area of the circle. Use $\pi \approx 3.14$.



$$\begin{aligned}C &= 2\pi r \\&= 20\pi \\&= 62.8\end{aligned}$$

30. Find the circumference of the circle.
Use $\pi \approx 3.14$.



$$\begin{aligned}C &= 2\pi r \\&= 50.4\pi\end{aligned}$$

[A] 79.13 in.

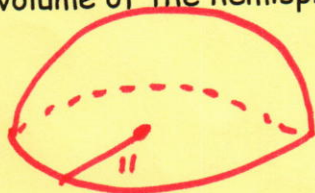
[B] 1994.03 in.

[C] 158.26 in.

[D] 316.51 in.

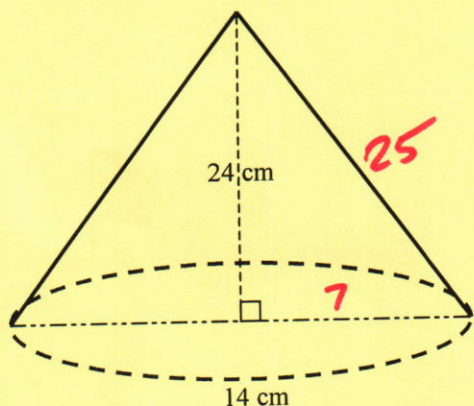
Chapter 9 Review
Semester 2 Final Exam

1. Find the volume of the hemisphere with diameter of 22 inches.



$$V = \underline{887\pi \text{ or } 2786.2 \text{ in}^3}$$

2. Find the following parts of the cone. Use 3.14 for π .



$$7^2 + 24^2 = l^2$$

Radius of base = 7

Area of base (B) = 43.96 153

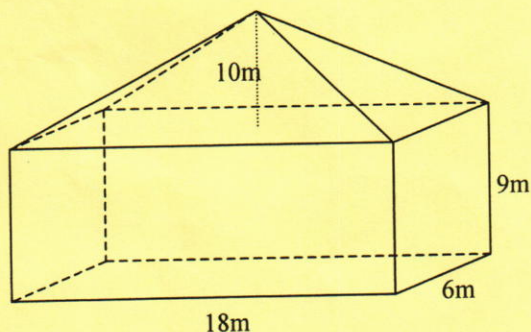
Slant height (l) = 25

Lateral area = 175\pi or 549.5

Total Surface area = 224\pi or 703.36

Volume = 392\pi or 1230.9

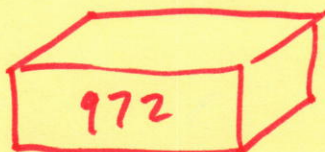
3. Find the volume of the composite shape.



$$\frac{1}{2} \cdot B \cdot H$$

$$\frac{1}{2} \cdot 18 \cdot 10$$

Volume = 1332



$$18 \times 6 \times 7 = 972$$

972

Name: _____

Chapter 9 Review
Semester 2 Final Exam

1. Find the number of faces and edges for the figure below.

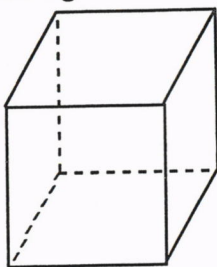
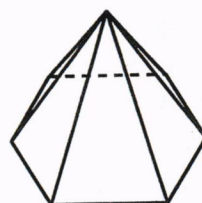


Exhibit A

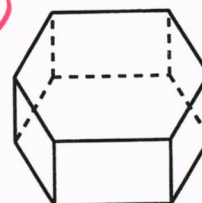
- [A] 6 faces, 6 edges
[B] 6 faces, 12 edges
[C] 8 faces, 12 edges
[D] 7 faces, 13 edges

2. Which of the following has 12 vertices?

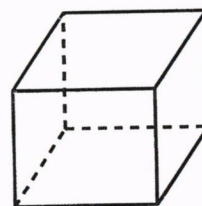
[A]



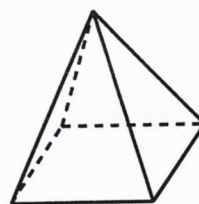
[B]



[C]

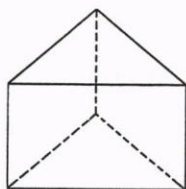


[D]

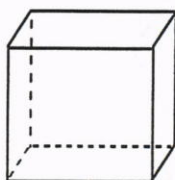


3. Which one of the following figures represents a rectangular prism?

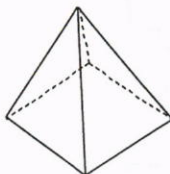
[A]



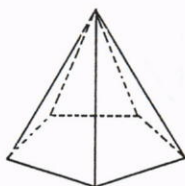
[B]



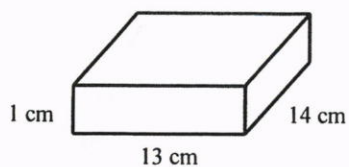
[C]



[D]



4. Find the surface area. The diagram is not to scale.



$$\begin{aligned} &13 \cdot 14 \\ B &= 182 \quad P = 54 \\ 2B &+ Ph \end{aligned}$$

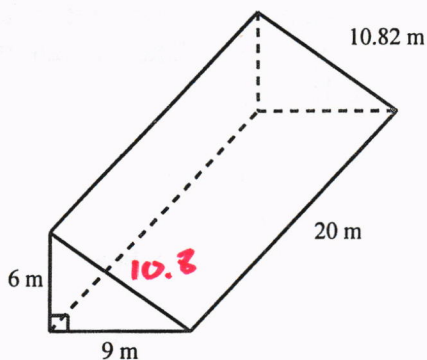
[A] 224 cm^2

[B] 182 cm^2

[C] 418 cm^2

[D] 378 cm^2

5. Find the surface area of the right triangular prism. Round to the nearest hundredth, if necessary.



$$B = 27 \quad P = 25.8$$

$$2B + Ph$$

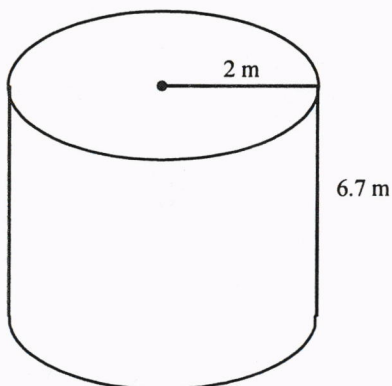
[A] 570.40 m^2

[B] 1080.00 m^2

[C] 540.00 m^2

[D] 510.40 m^2

6. Find the surface area of the cylinder to the nearest square unit. Use 3.14 for π . The diagram is not to scale.



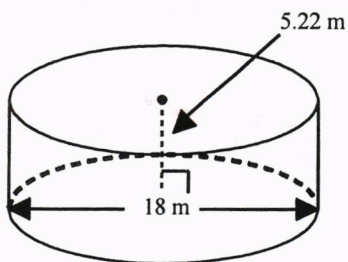
[A] 55 m^2

[B] 109 m^2

[C] 13 m^2

[D] 17 m^2

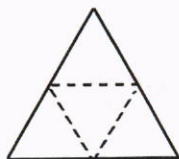
7. Find the lateral area and surface area of the cylinder. Use 3.14 for π and round the answers to the nearest hundredth, if necessary.



$$LA: 295.03$$

$$SA: 803.7$$

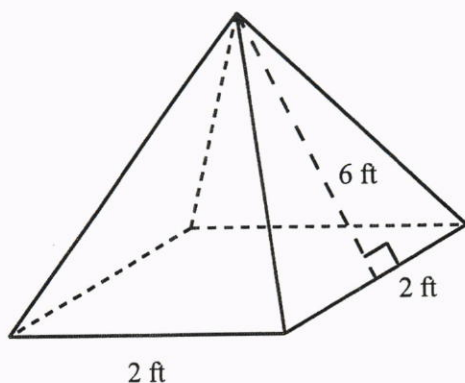
8.



What shape will be made if this net is folded along the dotted lines?

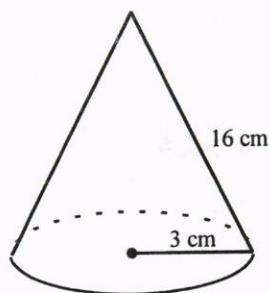
- [A] rectangular prism
- [B] cylinder
- [C] hexagonal prism
- ☒ [D] triangular pyramid

9. Find the surface area of the solid. Round to the nearest tenth. The diagram is not to scale.



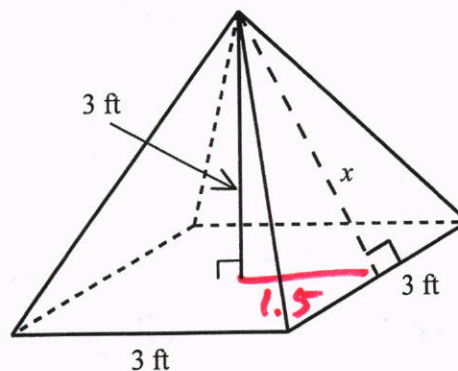
- [A] 48 ft^2
- [B] 24 ft^2
- ☒ [C] 28 ft^2
- [D] 52 ft^2

10. Find the exact total surface area, in terms of π , of a cone that has a slant height of 16 centimeters and a radius of 3 centimeters. The diagram is not to scale.



- ☒ [A] $57\pi \text{ cm}^2$
- [B] $114\pi \text{ cm}^2$
- [C] $48\pi \text{ cm}^2$
- [D] none of these

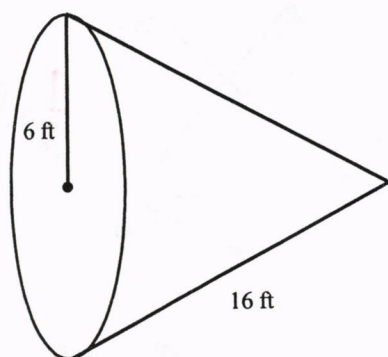
11. Find the value of x , the slant height of the regular pyramid. Round your answer to the nearest hundredth, if necessary.



- [A] 4.5 ft
- ☒ [B] 3.35 ft
- [C] 2.12 ft
- [D] 4.24 ft

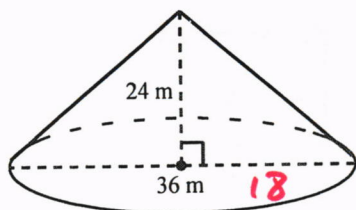
$$1.5^2 + 3^2 = x^2$$

12. Find the lateral area and the surface area of the cone. Use 3.14 for π and round the answer to the nearest hundredth. The diagram is not to scale.



- [A] lateral area = 1808.64 ft^2 ; surface area = 414.48 ft^2
☒ [B] lateral area = 301.44 ft^2 ; surface area = 414.48 ft^2
 [C] lateral area = 192.00 ft^2 ; surface area = 301.44 ft^2
 [D] none of these

13. Find the slant height of the right cone.



$$18^2 + 24^2 = l^2$$

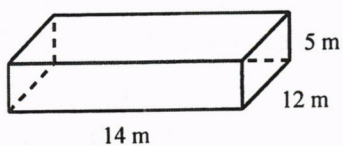
[A] 43 m

☒ [B] 30 m

[C] 22 m

[D] 900 m

14. Find the volume of the rectangular prism. The diagram is not to scale.



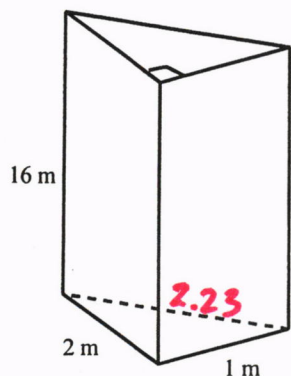
☒ [A] 840 m^3

[B] 420 m^3

[C] 596 m^3

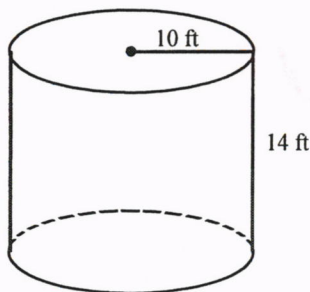
[D] 31 m^3

15. Find the volume of the solid. Round the answer to the nearest hundredth, if necessary. The diagram is not to scale.



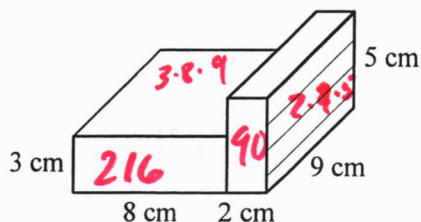
$B: 1$
 $P: 5.23$
 $2.1 + 5.23 \cdot 16$
 85.68

16. Find the volume of the cylinder. Use 3.14 for π and round your answer to the nearest cubic foot. The diagram is not to scale.



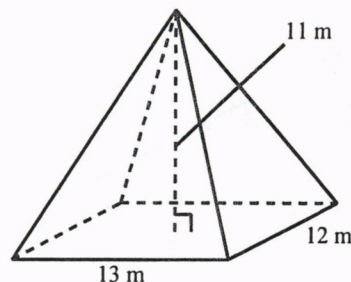
- [A] 1400 ft³ [B] 4396 ft³
 [C] 440 ft³ [D] 6154 ft³

17. Find the volume of the combined prisms.



- [A] 90 cm³ [B] 306 cm³
 [C] 279 cm³ [D] 216 cm³

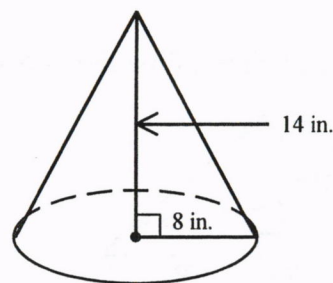
18. Find the volume of the pyramid. The diagram is not to scale.



$\frac{1}{3} \cdot B \cdot h$

- [A] $63\frac{5}{9}$ m³ [B] 12 m³
 [C] 1716 m³ [D] 572 m³

19. Find the volume of the solid. Round to the nearest tenth and use 3.14 for π . The diagram is not to scale.



- [A] 117.2 in.³ [B] 925.6 in.³
 [C] 937.8 in.³ [D] 4923.5 in.³

20. Find the volume of a cone that has a diameter of 14 feet and a height of 27 feet to the nearest square meter. Use 3.14 for π .

- [A] 4154 ft³ [B] 5539 ft³
 [C] 1385 ft³ [D] 1187 ft³

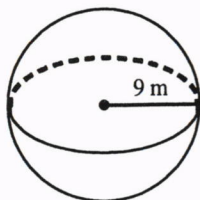
$r = 7$

$$7.8 \cdot 3 \cdot h = 93.6$$

21. A rectangular pyramid has a volume of 93.6 cubic meters, a width of 7.8 meters and a length of 3 meters. What is the height of the pyramid?

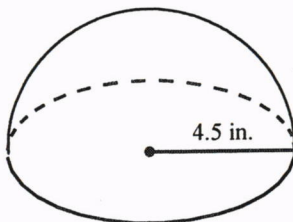
[A] 4 m [B] 36 m
[C] 24 m [D] 12 m

22. Find the surface area of a sphere if the radius, r , is 9 meters. Give your answer in terms of π .



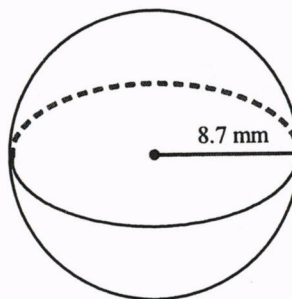
[A] $648\pi \text{ m}^2$ [B] $324\pi \text{ m}^2$
[C] $1296\pi \text{ m}^2$ [D] $72\pi \text{ m}^2$

23. Find the volume of the hemisphere. Use 3.14 for π and round your answer to the nearest tenth.



[A] 143.1 in.^3 [B] 107.3 in.^3
[C] 190.8 in.^3 [D] 42.4 in.^3

24. Find the volume of the sphere. Use 3.14 for π . Round your answer to the nearest cubic millimeter.



2757 mm^3

1. Express each function as a fraction in simplest form.

$$\sin F = \frac{3}{5}$$

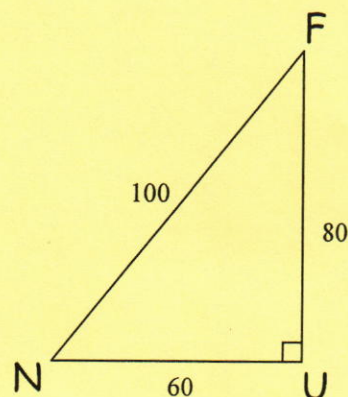
$$\sin N = \frac{4}{5}$$

$$\cos F = \frac{4}{5}$$

$$\cos N = \frac{3}{5}$$

$$\tan F = \frac{3}{4}$$

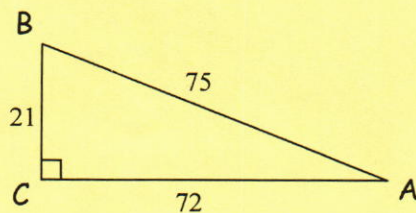
$$\tan N = \frac{4}{3}$$



2. Calculate $\cos 25^\circ$ to four decimal places. .9063

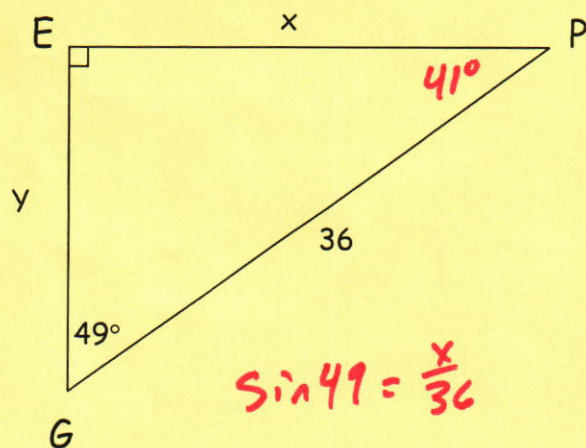
3. Find the measure of angle A.

$$\sin^{-1}\left(\frac{21}{75}\right)$$



$$m\angle A = \underline{16.3}$$

4. Solve the triangle. Round to the nearest tenth.



$$\sin 49 = \frac{x}{36}$$

$$\cos 49 = \frac{y}{36}$$

$$m\angle P = \underline{41}$$

$$x = \underline{27.2}$$

$$y = \underline{23.7}$$

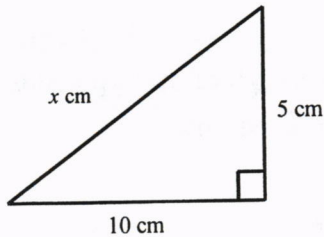
Name: _____

Chapter 10 Review
Semester 2 Final Exam

1. Use a calculator to find the square root of 133. Round your answer to the nearest tenth.
Check that your answer is reasonable.

11.5

2. Use the Pythagorean Theorem to find the length of the hypotenuse to the nearest hundredth.
The diagram is not to scale.



$$10^2 + 5^2 = x^2$$

[A] 25 cm

[B] 11.18 cm

[C] 5.48 cm

[D] 7.50 cm

Multiply the radicals. Then simplify if possible.

$\sqrt{221}$ but doesn't simplify

3. a. $\sqrt{17} \cdot \sqrt{13}$
b. $\sqrt{4} \cdot \sqrt{9}$

[A] a. $\sqrt{221}$
b. 6

[B] a. $\sqrt{30}$
b. $\sqrt{13}$

[C] a. $\sqrt{221}$
b. 36

[D] none of these

4. $\sqrt{11} \cdot \sqrt{55}$

[A] 11

[B] $121\sqrt{5}$

[C] 605

[D] $11\sqrt{5}$

5. $9\sqrt{6} \cdot \sqrt{6}$

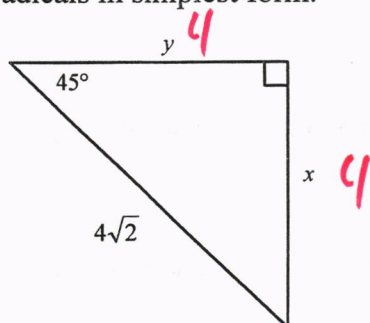
[A] 54

[B] 15

[C] 324

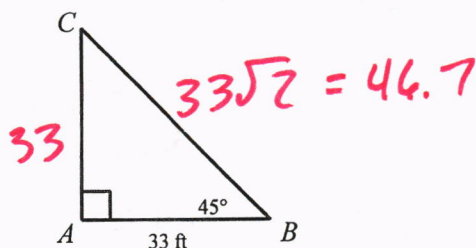
[D] 21

6. Find the missing measures. Write all radicals in simplest form.



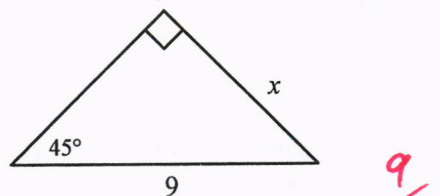
- [A] $x = 4\sqrt{3}, y = 8$
 [B] $x = 4, y = 4$
 [C] $x = 4\sqrt{2}, y = 4\sqrt{2}$
 [D] $x = 4\sqrt{2}, y = 4\sqrt{3}$

7. Using your knowledge of special right triangles, find the length of the hypotenuse. Round to the nearest hundredth when necessary.



- [A] 23.33 ft [B] 15.56 ft
 [C] 46.67 ft [D] 33 ft

8. Find the value of x to the nearest tenth.



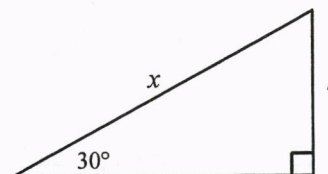
- [A] 12.7 [B] 6.4
 [C] 6 [D] 7.8

9. True or false? In every $45^\circ-45^\circ-90^\circ$ triangle, the length of the hypotenuse is the length of a leg times $\sqrt{2}$.

Find the value of x .

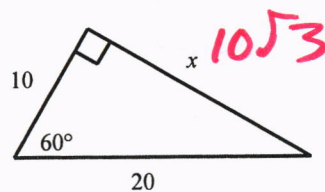
$\sin 30^\circ = \frac{7}{x}$

10.



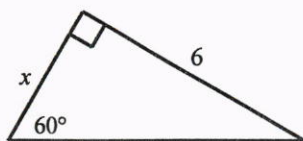
- [A] 14 [B] 16
 [C] $7\sqrt{3}$ [D] $7\sqrt{2}$

11.



- [A] $10\sqrt{3}$ [B] $5\sqrt{3}$
 [C] $20\sqrt{3}$ [D] 10

12. Find the value of x . Round the answer to the nearest tenth, if necessary.



$$\tan 60 = \frac{6}{x}$$

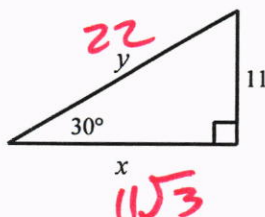
[A] 2.4

[B] 3

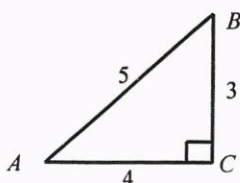
[C] 12

[D] 3.5

13. Find the values of x and y .



14. Express $\tan A$ as a fraction in simplest form.

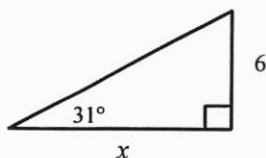


$$\tan A = \frac{3}{4}$$

15. Use a calculator to approximate $\tan 38^\circ$ to the nearest hundredth.

$$.78$$

16. Use a tangent ratio to find the value of x . Round your answer to the nearest tenth. The diagram is not to scale.



$$\tan 31 = \frac{6}{x} \rightarrow 9.985$$

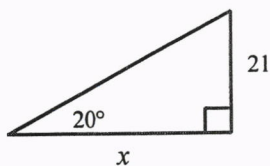
[A] 11.6

[B] 10.0

[C] 3.6

[D] 7.0

17. Find the value of x . Round to the nearest tenth. The diagram is not to scale.



$$\tan 20 = \frac{21}{x}$$

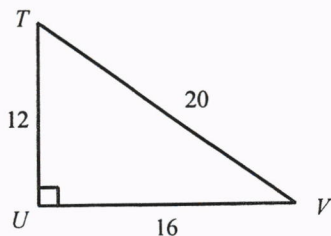
[A] 22.3

[B] 57.7

[C] 61.4

[D] 7.6

18. Find the sine, cosine, and tangent of $\angle T$. The diagram is not to scale.



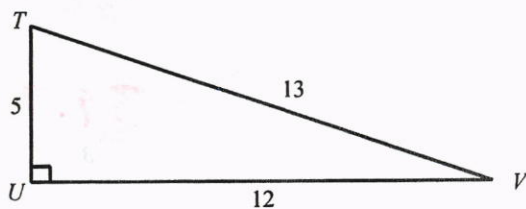
[A] $\sin T = \frac{4}{5}$; $\cos T = \frac{3}{5}$; $\tan T = \frac{4}{3}$

[B] $\sin T = \frac{5}{4}$; $\cos T = \frac{4}{3}$; $\tan T = \frac{5}{3}$

[C] $\sin T = \frac{4}{5}$; $\cos T = \frac{3}{4}$; $\tan T = \frac{3}{5}$

[D] $\sin T = \frac{3}{4}$; $\cos T = \frac{3}{5}$; $\tan T = \frac{4}{5}$

19. Find the sine, cosine, and tangent of $\angle T$. Write your answers as fractions. The diagram is not to scale.

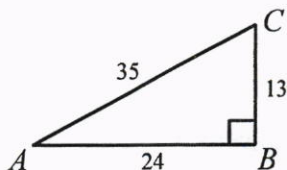


$$\sin T = \frac{12}{13}$$

$$\cos T = \frac{5}{13}$$

$$\tan T = \frac{12}{5}$$

20. Find $\sin A$ and $\cos A$ as fractions and as decimals rounded to four decimal places. The diagram is not to scale.



[A] $\sin A = \frac{13}{35} \approx 0.3714$

$$\cos A = \frac{13}{24} \approx 0.5417$$

[C] $\sin A = \frac{24}{35} \approx 0.6857$

$$\cos A = \frac{13}{35} \approx 0.3714$$

[B] $\sin A = \frac{13}{35} \approx 0.3714$

$$\cos A = \frac{24}{35} \approx 0.6857$$

[D] $\sin A = \frac{13}{24} \approx 0.5417$

$$\cos A = \frac{13}{35} \approx 0.3714$$

21. Use a calculator to approximate $\cos 59^\circ$ to four decimal places.

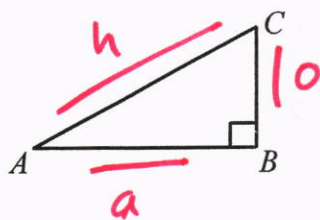
[A] 0.5150

[B] 59

[C] 1.6643

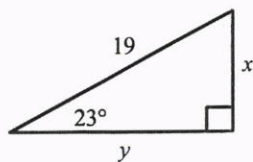
[D] 0.8572

22. Use the diagram to find the ratio for $\cos A$.



- [A] $\frac{CB}{AB}$ [B] $\frac{AB}{CB}$
 [C] $\frac{AB}{AC}$ [D] $\frac{BC}{AC}$

23. Find the lengths of the legs of the triangle. Round answers to the nearest tenth. The diagram is not to scale.

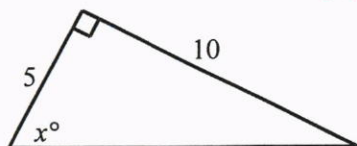


$$\sin 23 = \frac{x}{19}$$

$$\cos 23 = \frac{y}{19}$$

- [A] $x \approx 0.9; y \approx 0.4$
 [B] $x \approx 0.4; y \approx 0.9$
 [C] $x \approx 7.4; y \approx 17.5$
 [D] $x \approx 17.5; y \approx 7.4$

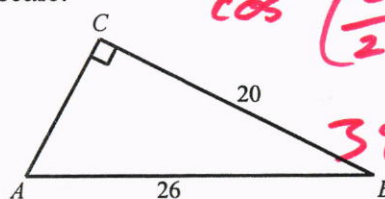
24. Find the measure of the marked acute angle to the nearest degree. The diagram is not to scale.



$$\tan x = \frac{10}{5}$$

- [A] 63 [B] 24 [C] 42 [D] 27

25. For $\triangle ABC$, find the measure of $\angle B$ to the nearest degree. The diagram is not to scale.



$$\cos^{-1}\left(\frac{20}{26}\right)$$

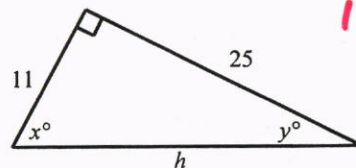
$$39.7 \approx 40^\circ$$

26. Use a calculator to find the measure of the angle to the nearest degree.
 $\cos B = 0.7880$

$$\text{use } \cos^{-1}$$

- [A] 52° [B] 22°
 [C] 38° [D] 7°

27. Find each measure to the nearest tenth. The diagram is not to scale.



$$11^2 + 25^2 = h^2$$

$$27.3$$

$$27.3$$

$$\tan y = \frac{11}{25} \quad y = 23.7$$

$$\tan x = \frac{25}{11} \quad x = 66.3$$