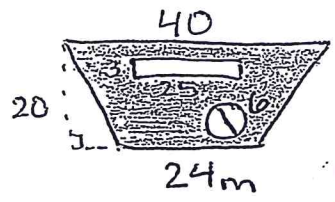


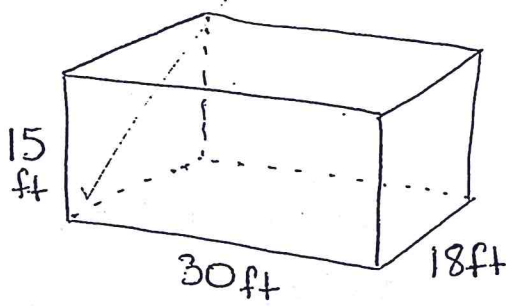
L75: Geometry Review for Spring Final Name: _____

1) Find the Area of the shaded region (not to scale) don't forget units. Use 3.14 for π round to nearest tenth.



$A = A_{TRAP} - A_{RECT} - A_{CIRCLE}$
 $A = \frac{1}{2}(40+24)20 - 3 \cdot 2.5 - 3.14(3^2)$
 $A \approx 536.7$

2) Find the surface Area and volume

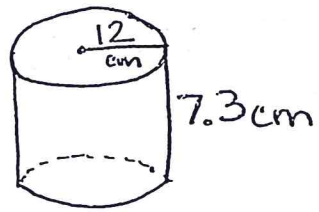


What is this shape called? rectangular prism

SA. 2520 SA = $2(15 \cdot 30 + 15 \cdot 18 + 18 \cdot 30)$

Volume: 8100 $V = 15 \cdot 30 \cdot 18$

3) Use 3.14 for π round to nearest unit.

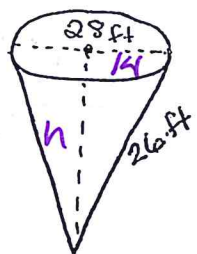


Find Surface Area and volume

SA: 1455 cm OR 463.2 π cm V: 3302 cm³

$SA = 2(12^2 \pi) + 2\pi(12)(7.3)$
 $= 288\pi + 175.2\pi$
 $V = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi (12^2)(7.3)$
 $V = 3302 \text{ cm}^3$

4)

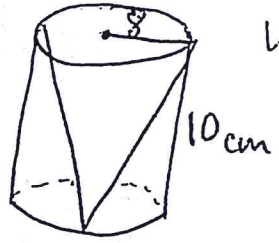


Find the volume

$h^2 = 26^2 - 14^2 = 480$
 $h \approx 21.9$

$V = \frac{1}{3} \pi (14^2)(21.9) = 4496 \text{ ft}^3$

5) What's the volume of a cylinder without the cone?

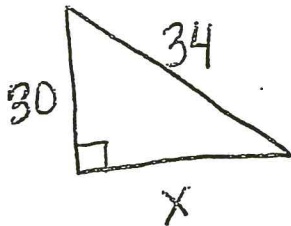


$V = V_{CYL} - V_{CONE} = \pi(8^2)(10) - \frac{1}{3}\pi(8^2)(10) = \frac{2}{3}\pi(8^2)(10)$
 $V = 426.7 \pi \text{ cm}^3 \text{ OR } 1340 \text{ cm}^3$

6) How do you know if 3 #'s are a pythagorean triple? Are these?

- A 1, 2, 3
 B 3, 4, 5
 C 6, 8, 10
 D 14, 15, 21
- Multiple of 3, 4, 5

7



Find the value of x (leave in radical form)

$$x^2 + 30^2 = 34^2$$

$$x = 16$$

$$\begin{array}{r} x^2 + 900 = 1156 \\ -900 \quad -900 \\ \hline \end{array}$$

$$x^2 = 256$$

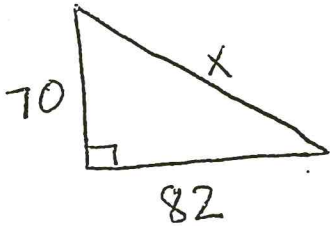
$$70^2 + 82^2 = x^2$$

~~$x = 107$~~

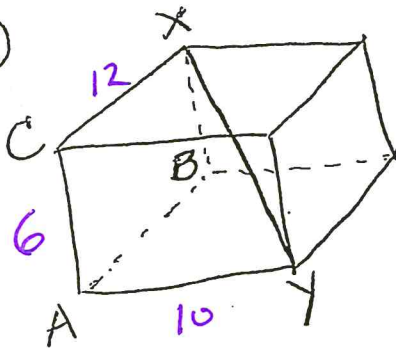
$$11624 = x^2$$

$$x = \sqrt{11624}$$

8



9



Find the value of XY (Keep in radical form)

$$AY = 10 \text{ ft}$$

$$XY^2 = 12^2 + 10^2 + 6^2$$

$$AB = 12 \text{ ft}$$

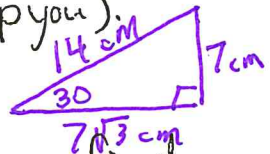
$$XY^2 = 280$$

$$AC = 6 \text{ ft}$$

$$XY = \sqrt{280} = 2\sqrt{70}$$

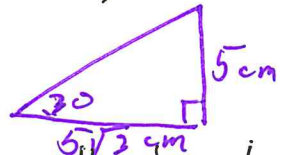
10 In a 30-60-90 triangle the hypotenuse is 14 cm.

Find the perimeter. (make a diagram to help you).
(Keep in radical form) $P = (21 + 7\sqrt{3}) \text{ cm}$



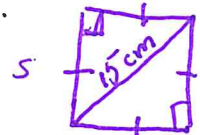
11 In a 30-60-90, the short side is 5 cm, find the area. Leave in radical form.

$$A = \frac{1}{2}(5)(5\sqrt{3}) = 12.5\sqrt{3} \text{ cm}^2$$



12 If the diagonal/square is 15 cm what are the legs/side of the square? Keep in radical form.

$$5 = \frac{15}{\sqrt{2}} = \frac{15\sqrt{2}}{2} \text{ cm}$$



13 Solve:

$$\frac{5}{x-3} = \frac{8}{x}$$

$$8(x-3) = 5x$$

$$8x - 24 = 5x$$

$$3x = 24 \quad x = 8$$

14 Define Similar Triangles

Same shape but not necessarily same size.

15 What is the ratio of getting a seven on

16) Find the ratio of 5 hours to 20 minutes: Reduce answers

$$\frac{5 \text{ hours}}{20 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hours}} = \frac{60}{4} = \boxed{\frac{15}{1}} \text{ or } \boxed{15:1}$$

17) What's the ratio of consonants to vowels in the word GEOMETRY? 4:4 or 1:1

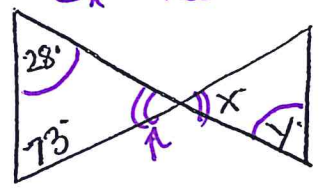
18) Triangles FYI and Triangle GRL are similar. Draw them and label the sides and angles with congruent marks and tell me the similarity ratio. $\overline{FY} = 22$ and $\overline{GR} = 15$ and $\overline{IF} = 18$

What does \overline{LG} equal? $\boxed{x \approx 12.27}$

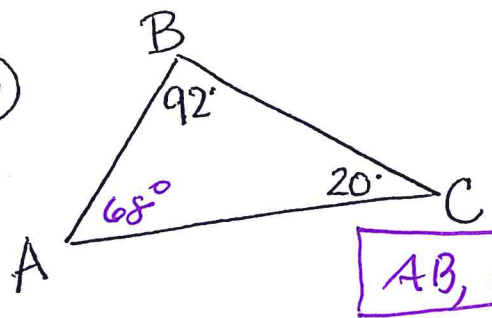
$$\frac{FY}{GR} = \frac{IF}{LG} \rightarrow \frac{22}{15} = \frac{18}{x}$$

Find x and y values if these two triangles are similarity.

$$y = 28^\circ \quad x = 180^\circ - 28^\circ - 73^\circ = 79^\circ$$



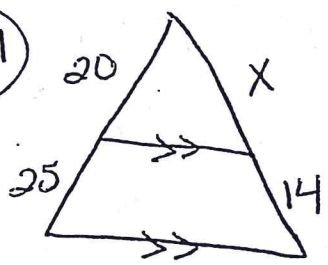
19



List the sides from smallest to largest. $\angle A = 68^\circ$ Longest side opposite largest angle...

$\boxed{AB, BC, AC}$

21



Find the value of x.

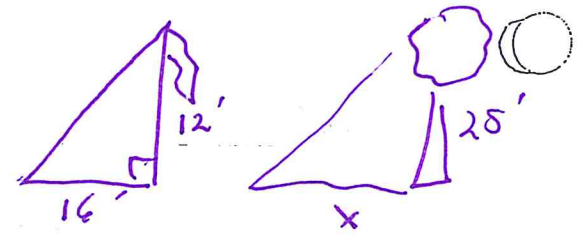
~~$$\frac{45}{x+14} = \frac{25}{14}$$~~

$$\begin{array}{r} 25x + 350 = 630 \\ -350 \quad -350 \\ \hline 25x = 280 \end{array}$$

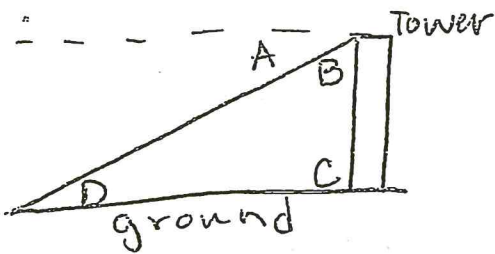
$\boxed{x = 11.2}$

22) If a 12' flagpole cast a 16' shadow, how long is a shadow cast by the nearby 28' tree at the same time?

$$\frac{25}{12} = \frac{x}{16} \quad \boxed{x \approx 33 \frac{1}{3}'}$$



23

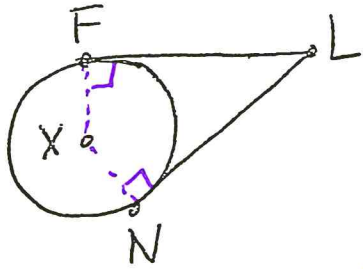


Name the angle of elevation and angle of depression.

∠ of elevation = D

∠ of depression = A

24

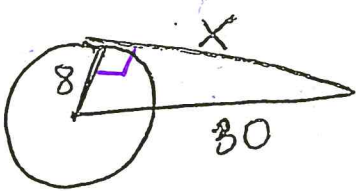


Explain everything you can about the geometry behind this diagram.

$\angle XFL = \angle XNL = 90^\circ$ $\angle X + \angle L = 180^\circ$

$FL = NL$

25



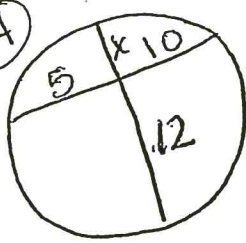
Find the value of x (keep in radical form.)

$x^2 + 8^2 = 30^2$

$x^2 = 836$

$x \approx 28.9$

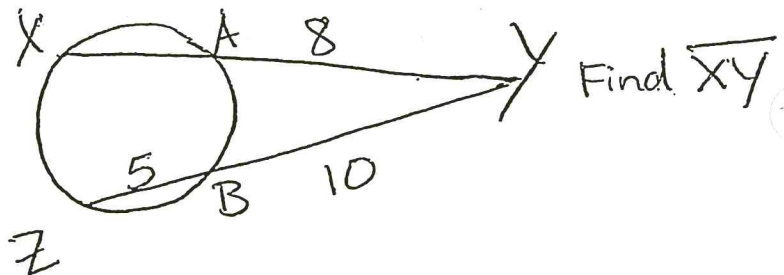
26 (A)



$12x = 5 \cdot 10$

$x \approx 4.17$

(B)



27

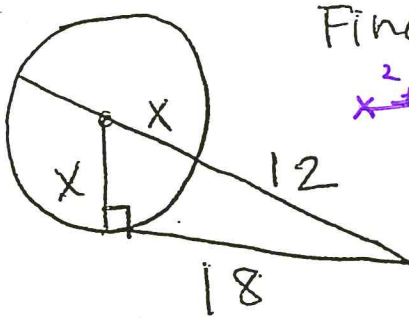
Area ratios are 16 to 144 what's the ratio similarity and volume ratio?

$LR = \sqrt{AR} = \sqrt{\frac{144}{16}} = \frac{12}{4} = \frac{3}{1}$ (linear)

$VR = LR^3 = \left(\frac{3}{1}\right)^3 = \frac{27}{1}$

$LR = \frac{3}{1}$
 $VR = \frac{27}{1}$

28



Find x value

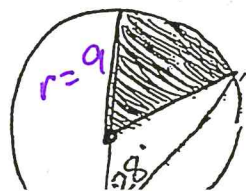
$x^2 + 12^2 = (x+12)^2$

$x^2 + 324 = x^2 + 24x + 144$

$180 = 24x$

$7.5 = x$

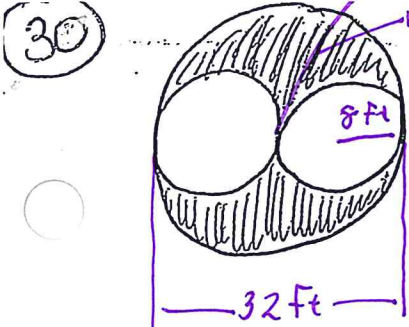
29



diameter 18cm

Find the area of the sector

$A = 81\pi \left(\frac{56}{360}\right) = 12.6\pi$

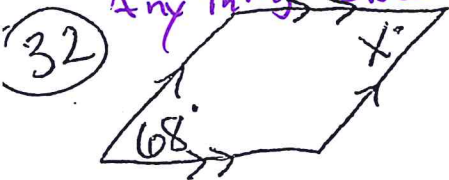


Each small circle is tangent to the other
 If the diameter of the largest circle is 32 ft
 What's the area of the shaded region?
 Leave in π form

$$A = \pi 16^2 - 2(\pi 8^2) = 256\pi - 128\pi$$

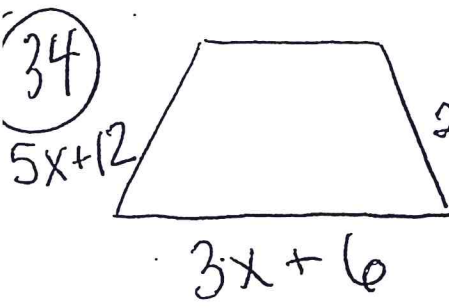
$$A = 128\pi \text{ ft}$$

31) What is a polygon? What's not a polygon?
 A two-dimensional closed figure of three or more line segments.
 Anything else is NOT a polygon.



Find x value. Define parallelogram.
 $x = 68^\circ$ A parallelogram is a quadrilateral with two pairs of parallel sides

33) put All the quadrilaterals in a venn diagram
 See last page



Isosceles trapezoid Find the x value.
 Isosceles \rightarrow legs are congruent

$$\begin{array}{r} 5x+12 = 2x-9 \\ -2x \quad -12 \quad -2x-12 \\ \hline 3x = -21 \\ \boxed{x = -7} \end{array}$$

But $2x-9$ is a negative number so problem has NO SOLUTION!

35) Define Rhombus (Sides, Angles, Diagonals)

Define Kite

Define Trapezoid

See last page

