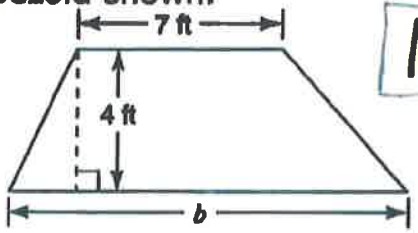
Name Key Period ____

Geometry Review (Advanced)

1. Determine the length of the base of the trapezoid shown.



area = 38 sq ft

12 ft

$A = \frac{1}{2}(b_1 + b_2)h$

$38 = \frac{1}{2}(7+b)\cdot 4$

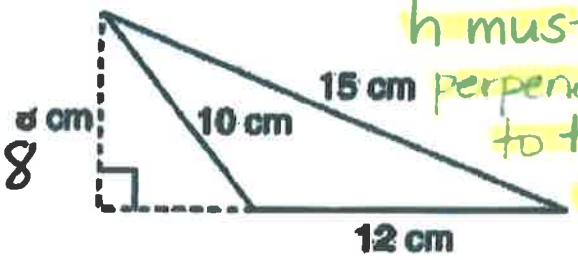
$\frac{38}{2} = \frac{2(7+b)}{2}$

$7+b = 19$

$-7 \quad -7$

$b = 12$ ft.

2. Find the area of the triangles below.



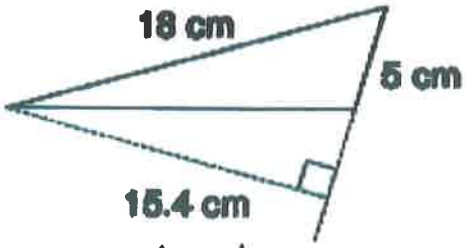
h must be perpendicular to the base

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(12)(8)$

$A = \frac{1}{2}(96)$

$A = 48\ cm^2$



$A = \frac{1}{2}bh$

$A = \frac{1}{2}(5)(15.4)$

$A = \frac{1}{2}(77)$

$A = 38.5\ cm^2$

$15.4 \times 5 = 77.0$

$2\overline{)77.0}$ → 38.5

-6 ↓

17

-16 ↓

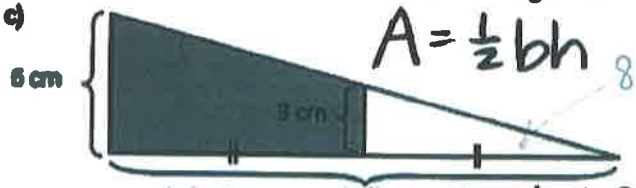
10

-10

0

3. Find the area of the shaded regions.

c)



$A = \frac{1}{2}bh$

$8 \div 2 = 4$ cm

$A = \frac{1}{2}(6)(8)$

$A = \frac{1}{2}(48)$

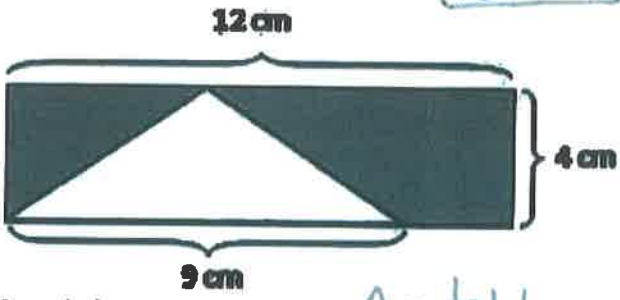
$A = 24\ cm^2$

$A = \frac{1}{2}(3)(4)$

$A = \frac{1}{2}(12)$

$A = 6\ cm^2$

shaded $= 24 - 6 = 18\ cm^2$



$A = bh$

$A = 12 \cdot 4$

$A = 48\ cm^2$

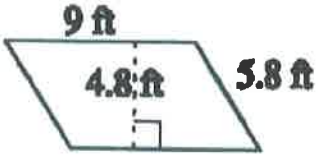
$A = \frac{1}{2}bh$

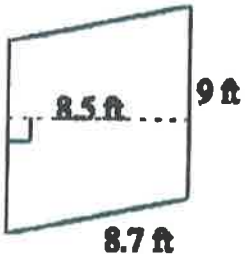
$A = \frac{1}{2}(9)(4)$

$A = \frac{1}{2}(36) = 18\ cm^2$

shaded $= 48 - 18 = 30\ cm^2$

4. Determine the area of the parallelograms shown.





base and height must be perpendicular (form right angles)

$A = bh$

$A = (9)(4.8)$

$A = 43.2\ ft^2$

$A = bh$

$A = (9)(8.5)$

$A = 76.5\ ft^2$

5. A triangle has a base of 55 centimeters and an area of 825 square centimeters. What is the height of the triangle?

$A = \frac{1}{2}bh$

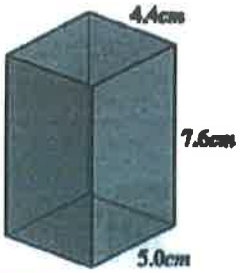
$825 = \frac{1}{2}(55)h$

$\frac{825}{27.5} = \frac{27.5h}{27.5}$

30
275|8250
-825
00
-0
0

$h = 30\text{cm}$

6. Determine the volume of the rectangular prisms. Round to the nearest tenth if necessary.



$V = Bh = lwh$

$V = (4.4)(5)(7.6)$

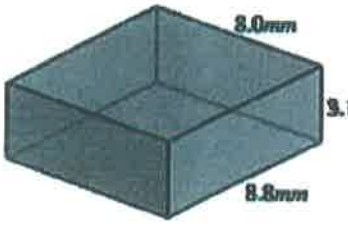
$4.4 \times 5 = 22.0$

$22 \times 7.6 = 132$

$+1540$

167.2

$V = 167.2\text{ cm}^3$



$V = Bh = lwh$

$V = 8(8.8)(3.1)$

$8.8 \times 8 = 70.4$

$70.4 \times 3.1 = 704$

$+21120$

218.24

$V = 218.24\text{ mm}^3$

7. State if the three numbers can be the measures of the sides of a triangle. Prove your answer. Small + med > large

7, 5, 4 yes

$4+5>7$

$9>7$

3, 6, 2 no

$2+3<6$

$5<6$

1, 13, 13 yes

$1+13>13$

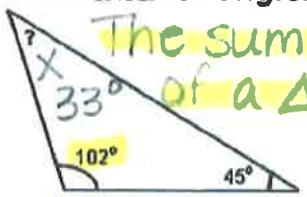
$14>13$

5, 15, 8 no

$5+8<15$

$13<15$

8. Find the missing angle(s) of each triangle and then classify the angle by its sides and its angles.



The sum of the angles of a Δ = 180 always.

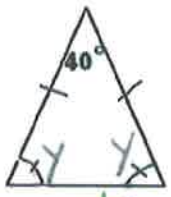
$102+45+x=180$

$147+x=180$

$-147 \quad -147$

$x = 33°$

obtuse scalene



$40+y+y=180$

$2y+40=180$

$-40 \quad -40$

$2y=140$

$y = 70°$

acute isosceles

9. The town of Riverview provides a rectangular recycling bin for newspapers to each household. If the volume is 3,840 cubic inches, what is the height of the recycling bin?

$V = Bh = lwh$

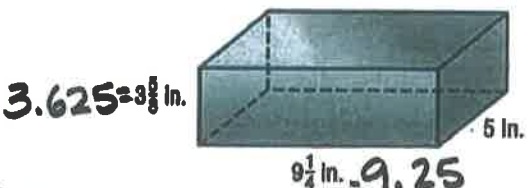
$3840 = 20 \cdot 12 \cdot h$

$\frac{3840}{240} = \frac{240 \cdot h}{240}$

$h = 16\text{ in}$

10. Janine keeps her jewelry in a jewelry box like the figure below. Determine the volume of Janine's jewelry box.

$V = Bh = lwh$



$V = (3.625)(9.25)(5)$

$V = 167.66\text{ in}^3$

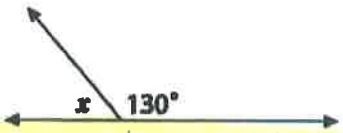
11. Find each value of x.

Complementary

$75 + x = 90$

$-75 \quad -75$

$x = 15°$



Supplementary

$130 + x = 180$

$-130 \quad -130$

$x = 50°$

12. Vocabulary Fill in the Blanks

A trapezoid is a quadrilateral with exactly one pair of parallel sides.

Two angles are complementary if their sum is 90 degrees.

area is the number of square units t cover a 2-D figure.

A scalene triangle is one with no sides congruent.

13. Formula Check (Use your STAAR chart.)

Area of a triangle $A = \frac{1}{2}bh$

Area of a rectangle $A = bh$ or $A = lw$

Area of a trapezoid $A = \frac{1}{2}(b_1 + b_2)h$

Volume of a rectangular prism $V = Bh$ $B = bh$

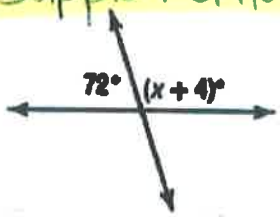
What is "b"? base or length

What is "h"? height or width

What is "B"? area of the base

14. Write and solve an equation to determine the value of x in each figure.

Supplementary



$72 + x + 4 = 180$

$76 + x = 180$

$-76 \quad -76$

$x = 104°$

Vertical

$\frac{62}{2} = \frac{2x}{2}$

$31° = x$

15. The angle measures of four figures are given in the table. Which is NOT a triangle?

Figure	Angle 1	Angle 2	Angle 3	
ABC	30° +	60° +	90° =	180
DEF	75° +	25° +	80° =	180
GHI	50° +	38° +	112° =	200
JKL	83° +	32° +	65° =	180

$\angle 1 + \angle 2 + \angle 3 = 180°$

16. The side lengths of four figures are given in the table. Which is NOT a triangle?

Figure	Side 1 (units)	Side 2 (units)	Side 3 (units)
ABC	3	4	5
DEF	3.25	2.5	3.25
GHI	9	16	28
JKL	10	10	10

The sum of any 2 sides is greater than the 3rd side.

$9 + 16 > 28$

$25 > 28$

No

$10 + 28 > 9$

$44 > 9$

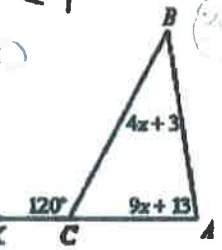
Yes

$28 + 9 > 11$

$37 > 16$

Yes

17. Determine the value of x in the triangle using the exterior angle theorem. $\angle 1 + \angle 2 = \angle 4$



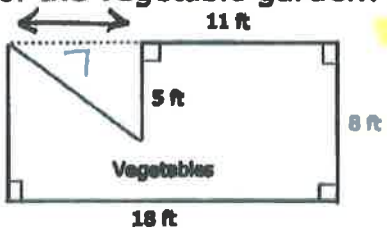
$13x + 16 = 120$
$-16 \quad -16$
$\frac{13x}{13} = \frac{104}{13}$
$x = 8°$

$9(8)+13$
$72+13$
$85°$

18. A storage trunk is shaped like a rectangular prism. The trunk's volume is 18 cubic feet. The length of the trunk is 6 feet and the width of the trunk is 2 feet. What is the height of this trunk?

$B = bh \quad V = Bh \quad h = \frac{18}{12}$
$B = 2 \cdot 6$
$B = 12 ft^2 \quad h = \frac{V}{B} \quad h = 1.5 ft$

19. The drawing below shows the dimensions of Mrs. Lowe's garden she will plant in vegetables. What is the area of the vegetable garden?

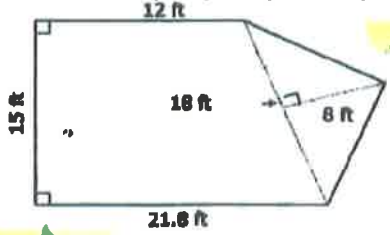


Area of rectangle
$A = bh$
$A = 8)(12)$
$A = 144 ft^2$

Area of triangle
$A = \frac{1}{2}bh$
$A = \frac{1}{2}(35)$
$A = 17.5 ft$

Subtract
$144 - 17.5 =$
$126.5 ft^2$

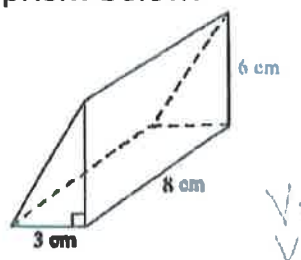
20. Susan sells hunting dogs. Shown below is an area of her property she enclosed so that the dogs could exercise properly. What is the total area of the enclosed property in square feet?



Area of trapezoid
$A = \frac{1}{2}(b_1 + b_2)h$
$A = \frac{1}{2}(12 + 21.8)15$
$A = \frac{1}{2}(33.8)15$
$A = 16.9(15)$

Add
$12 + 253.5$

21. Find the volume of the triangular prism below.



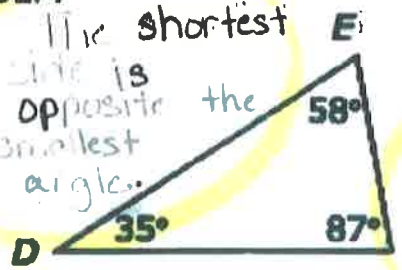
$B = \frac{1}{2}bh$
$B = \frac{1}{2}(3)(6)$
$B = \frac{1}{2}(18)$
$B = 9 cm^2$
$V = Bl$
$V = 9(8)$
$V = 72 cm^3$

22. Which of the following set of angle measures represents the measures of the angles of a triangle?

$\angle 1 + \angle 2 + \angle 3 = 180°$

F 60°, 30°, 90° 180°
G 70°+60°+40° = 170°
H 60°+48°+82° = 190°
J 100°+25°+65° = 190°

23. Look at the triangle shown below. What statement is true about triangle DEF?



The shortest side is opposite the smallest angle.

The longest side

A Side DE is longer than the sum of the lengths of sides EF and DF.
B Side DE is the midsize side of the triangle.
C DE > DF
D Side DF is the shortest side of the triangle.

24. Which of the following could be the lengths of the sides of a triangle?

F 3, 10, and 15
G 3, 1, and 2
H 11, 9, and 20
J 10, 4, and 12

$10 + 4 > 12$
$14 > 12$
yes
$4 + 12 > 10$
$16 > 10$
yes