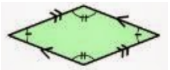
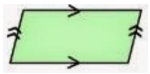
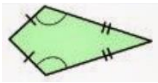
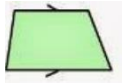
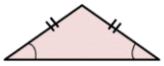
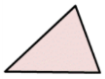
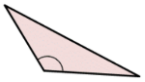
RAM WORKSHOP Geometry Name _____ www.RAMHouston.net

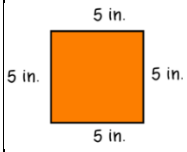
Basic Geometric Shapes (2D)

					
Square All sides equal; all angles 90°.	**Rectangle** Opposite sides equal; all angles 90°.	**Rhombus** All sides equal; 2 pairs of parallel lines; opposite angle equal.	**Parallelogram** Opposite angle equal, 2 pairs of parallel lines.	**Kite** Adjacent sides equal, 2 congruent angles.	**Trapezoid** 1 pair of parallel sides;

				
Equilateral triangle All sides equal; interior angles 60°.	**Isosceles triangle** 2 sides equal; 2 congruent angles	**Right triangle** 1 right angle	**Acute triangle** All angles acute	**Obtuse triangle** 1 obtuse angle

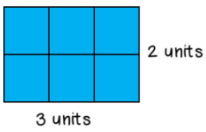
Perimeter, Area, and Volume

Perimeter (P)
Measurement of the distance around an object.



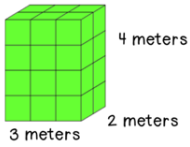
P=S+S+S+S
=5+5+5+5
P=20 in

Area (A)
Measurement of 2D space inside an object.



A=L×W
A=3×2
A=6 units^2

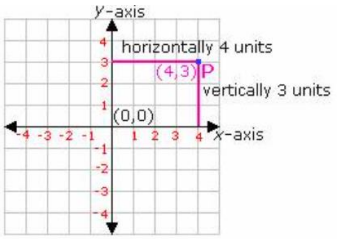
Volume (V)
Measurement of 3D space inside an object.



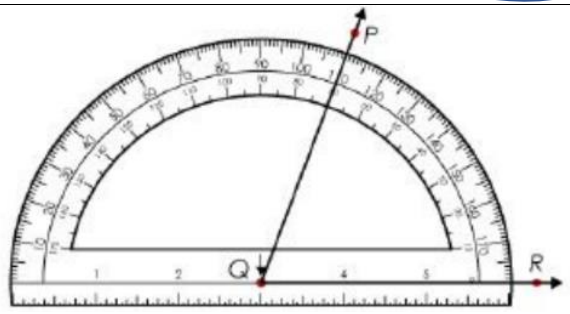
V=L×W×H
V=3×2×4
V=24 meters^3

Coordinate Plane

Origin (0,0)



Using a Protractor



The protractor's arrow and pen hole are placed on the angle's vertex. The 0's line is placed over one side of the angle. Read the measure where the other leg of the angle intersects the protractor.
∠PQR measures 70°.

Measurement Units

Length:
1 cm = 10 mm
1 m = 100 cm
1 km = 1000 m

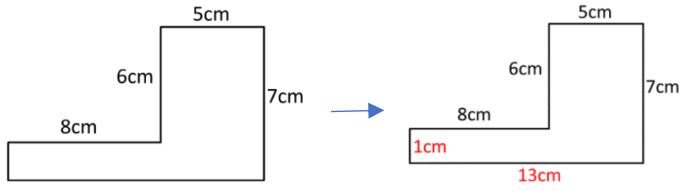
1 ft = 12 in
1 yd = 3 ft

Weight & Mass:
1 kg = 1000 g
1 ton = 1000 kg

1 lb = 16 oz

Applications

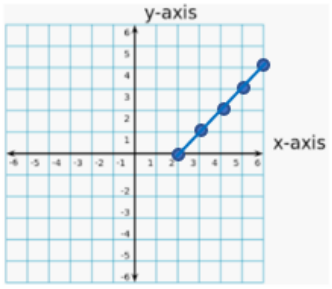
Find the area and perimeter of the following shape.



Perimeter = 7 + 5 + 6 + 8 + 1 + 13
= 40 cm

Area = 8 × 1 + 5 × 7
= 8 + 35
= 43 cm^2

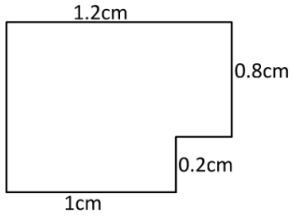
Find the expression for the line.



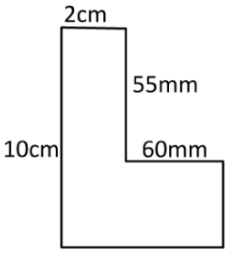
List the coordinates for the marked points.
(2,0)
(3,1)
(4,2)
(5,3)
(6,4)
We can get $y = x - 2$.

Exercises

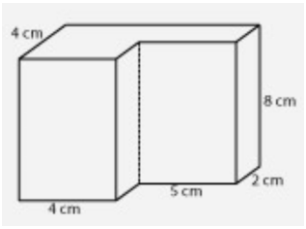
1. Find the area and perimeter of the following shape.



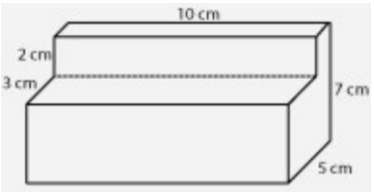
2. Find the area and perimeter of the following shape.



3. Find the volume of the following object.



4. Find the volume of the following object.



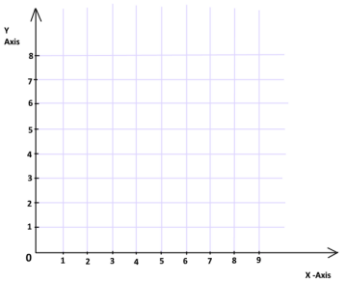
5. Which of the following sets contains only shapes that have 4 right angles?

A. square, trapezoid C. square, triangle
B. square, rhombus D. square, rectangle

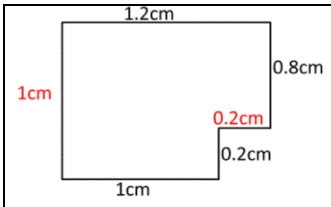
6. Ben's teacher told them to draw a quadrilateral with just 1 pair of parallel sides. Which shape did he draw?

A. Rectangle C. Rhombus
B. Trapezoid D. Parallelogram

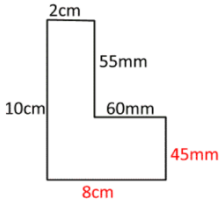
7. Points (2,1), (5,1), and (2,6) are three vertices of a rectangle. What are the coordinates of the fourth vertex?



Answer Key



1. A = 1×1 + 0.2×0.8
= 1 + 0.16
= 1.16 cm^2
P = 1.2+0.8+0.2+0.2+1+1
= 4.4 cm



2. A = 100mm×20mm + 60mm×45mm
= 2000 mm^2 + 2700 mm^2
= 4700 mm^2 = 47 cm^2
P = 20+55+60+45+80+100
= 360 mm = 36 cm

3. V = 4×4×8 + 5×2×8
= 128 + 80
= 208 cm^3

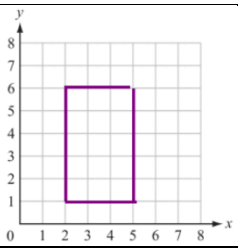
4. V = 3×10×5 + 2×10×7
= 150 + 140
= 290 cm^3

5. Which of the following sets contains only shapes that have 4 right angles?

D. square, rectangle

6. Ben's teacher told them to draw a quadrilateral with just 1 pair of parallel sides. Which shape did he draw?

B. Trapezoid



7. (5,6) is the coordinates of the fourth vertex.