

1.1 - Define points, lines and planes

1.2 - use algebra to write equations and find unknown portions of a line segment (Ex 5 pg 16)

$4x-2 + 16 = 5x+12$
 $14 = x + 12$
 $2 = x$ $5(2)+12$
 $10+12$
 whole segment: 22

1.3a - find the midpoint of a line segment

(x_1, y_1) (x_2, y_2)
 $M = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$

 $(-15, 4)$ & $(2, -10)$
 $M = \left(\frac{-15+2}{2}, \frac{4+(-10)}{2} \right) = \left(\frac{-13}{2}, \frac{-6}{2} \right)$
 $= (-6.5, -3)$

1.3b - find the distance between two points

$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

 $d = \sqrt{(2+15)^2 + (-10-4)^2}$
 $d = \sqrt{17^2 + (-14)^2}$
 $d = \sqrt{289 + 196} = 22.02$

1.4/1.5 - identify and utilize angle relationships (linear pairs and vertical angles, etc) to find missing values

$g = 180 - 107 = 73$
 $b = 73$ (vertical w/g)
 $d = 180 - 73 - 45 = 62$
 $c = 73$ (alternate interior angles)
 $a = 180 - 73 - 62 = 45$
 $f = 45$ (vertical w/a)
 $e = 180 - 45 = 135$

1.6 - find the perimeter and area of triangles, squares, rectangles and circles

11.1 - find area of a parallelogram

$A = bh$

11.2 - find the area of trapezoids, rhombi and kites

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

11.3 - find the area of sectors

$\frac{A_{sector}}{A_{circle}} = \frac{\angle_{sector}}{360^\circ}$
 $\frac{A_{sector}}{\pi(8)^2} = \frac{289^\circ}{360^\circ}$
 $A = \frac{289(64\pi)}{360} = 161.4 u^2$

11.4 – find the area of regular polygons and composite figures

12.2 – find the surface area of a prism

12.2 – find the surface area of a cylinder

12.3 – find the surface area of a pyramid

12.3 – find the surface area of a cone

12.4 – find the volume of a prism

12.4 – find the volume of a cylinder

12.5 – find volume of a pyramid

12.5 – find the volume of cone

12.6 – find the surface area of a sphere

12.6 – find the volume of a sphere

Whatever you would like

$$\begin{array}{r} \cancel{3x-30} \\ \cancel{2y+15} \end{array} \quad \begin{array}{r} \cancel{63} \\ \end{array}$$

$$\begin{array}{l} 3x-30=63 \\ 3x=93 \quad \boxed{x=31} \end{array}$$

$$\begin{array}{l} 2y+15+63=180 \\ 2y+78=180 \\ 2y=102 \\ \textcircled{y=51} \end{array}$$