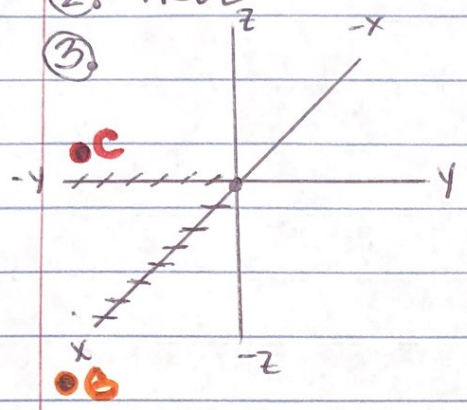
3-D COORDINATES

(1) TRIPLE

(2) TRUE

(3)



(4) $|\overline{PQ}| = \sqrt{2^2+18^2+2^2}$

$|\overline{PQ}| = \sqrt{332}$ units

$2\sqrt{83}$ u

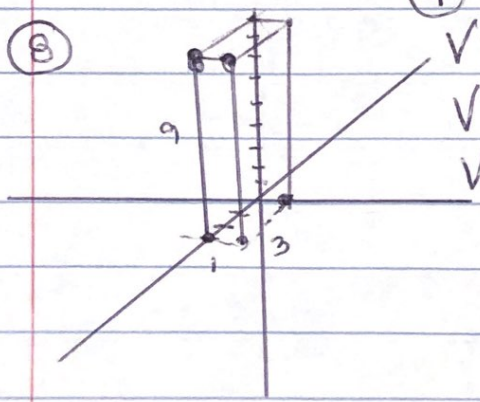
(5) $|\overline{CF}| = \sqrt{5^2+11^2+9^2}$

$|\overline{CF}| = \sqrt{227}$ units

(6) $(x+5)^2+(y-3)^2+(z+10)^2=169$

(7) $(4,-2,-1)$

(8)



(9)

$V = l \cdot w \cdot h$

$V = 9 \cdot 1 \cdot 3$

$V = 27 \text{ un}^3$

(10) a) A (10, 0, 2)
B (0, 0, 2)
C (0, 1, 2)
D (10, 1, 2)
E (10, 0, 0)
G (0, 1, 0)
H (10, 1, 0)

b) $V = l \cdot w \cdot h$

$= 10 \cdot 1 \cdot 2 = 20 \text{ un}^3$

c) $SA = 2(10 \cdot 1) + 2(1 \cdot 2) + 2(10 \cdot 2)$

$= 20 + 4 + 40$

$= 64 \text{ un}^2$

(11) $|\overline{AB}| = \sqrt{2^2+1^2+12^2} = \sqrt{149}$

$|\overline{BC}| = \sqrt{15^2+8^2+7^2} = \sqrt{338}$

$|\overline{AC}| = \sqrt{13^2+9^2+5^2} = \sqrt{275}$

SO PERIMETER =

$\sqrt{149} + \sqrt{338} + \sqrt{275}$

(12) $(3, -\frac{1}{2}, 1)$ $\overline{AB}$

$(-3\frac{1}{2}, 4, -1\frac{1}{2})$ $\overline{BC}$

$(-4\frac{1}{2}, 3\frac{1}{2}, 4\frac{1}{2})$ $\overline{AC}$

(13) $\sqrt{40^2+20^2+3^2}$

$\sqrt{2009}$ in

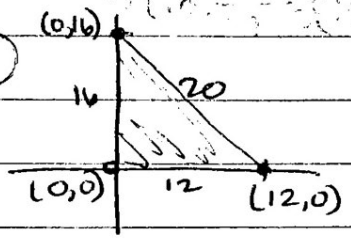
3-D COORDINATES

(14) $x^2+y^2+z^2=25$

(15) CENTER $(18,5,-11)$

$r = 6$ units

(16)



20) $\sqrt{16^2+12^2} = 20$

$\sqrt{21^2+12^2} = \sqrt{585}$

$\sqrt{5^2+0^2} = 5$

$P = 25+\sqrt{585}$ units

21. $5(x)-2(6)=15$

$5x = 27$

$x = \frac{27}{5}$ $\left(\frac{27}{5},6\right)$

(17) $\frac{QP}{QM} \sim \frac{QL}{QN} = \frac{1}{2}$

$\angle Q \cong \angle Q$ REFLEXIVE

BY SAS, $\triangle QPL \sim \triangle QMN$

THEREFORE, $\angle QLP \cong \angle QNM$

BECAUSE CORRESPONDING $\angle$S ARE $\cong$ IN $\sim$ $\triangle$S ✓ QED

22. AWV

18. $4x + 4x+2 + 6x = P$

$P = 14x+2$

19a) D(14, 5)

b) $|\overline{AD}| = \sqrt{3^2+10^2} = \sqrt{109}$ un

c) OMIT

(TRUE)