

HW 12.5 # 1, 5, 9, 11, 13, 15, 17, 19, 25, 31, 53 due 9/20

1.) $n = \langle 1, 3, 2 \rangle, (4, -1, 1) \rightarrow (x-4) + 3(y+1) + 2(z-1) = 0 \rightarrow x + 3y + 2z = 3$

5.) $n = \langle 1, 0, 0 \rangle, (3, 1, -9) \rightarrow (x-3) + 0(y-1) - 0(z+9) = 0 \rightarrow x = 3$

9.) $x + 2y + 3z = 0$

X 11.) C Correct Answer: B & D

13.) $\langle 9, -4, -11 \rangle$

15.) $\langle 3, -8, 11 \rangle$

17.) $\vec{PQ} = \langle -1, 2, -3 \rangle \quad \vec{PQ} \times \vec{PR} = \langle -6, -9, -4 \rangle$
 $\vec{PR} = \langle 1, 2, -6 \rangle$

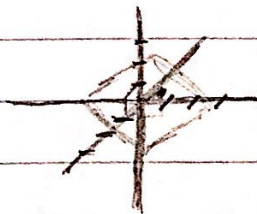
$$-6(x-1) - 9(y-1) - 4(z-1) = 0 \rightarrow -6x + 6 - 9y + 9 - 4z + 4 = 0$$
$$= -6x - 9y - 4z = -19$$

19.) $\vec{PQ} = \langle -1, 1, 1 \rangle \quad \vec{PQ} \times \vec{PR} = \langle 1, 2, -1 \rangle$
 $\vec{PR} = \langle 1, 0, 1 \rangle$

$$1(x-1) + 2(y-0) - 1(z-0) = 0 \rightarrow x - 1 + 2y - z = 0$$
$$= x + 2y - z = 1$$

25.) $1(x+2) + 0(y+3) + 1(z-5) = 0 \rightarrow x+2 + z-5 = 0 \rightarrow x+z = 3$

31.) $x+y+z = 4$



? 53.) $y = 0$

$$3x + by + 2z = 5, \quad b = \text{ANYTHING}$$