Name: Agim Amarachi Sarah
Department:Public Health
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Math101 Assigment Answers

1) AP First Term, a= -10…equ(1)
15th Term, T15=a +(n- 1)
= a+(15_1)d
= a+14d=11….equ(2)

Last term=41
Sum of all terms=?

From equ (2)
a+14d=11
_10+14d=11
14d=11+10
14d=21
D=21/142=3/2=1.5

For last term
Tn=a+(n-1)d
41=-10 +1.5n - 1.5
41=-11.5 +1.5n
41+11.5=1.5n
52.5=1.5n
n=52.5/1.5=35

Sum of all terms=Sn=n/2(a+l)
Hence,
Sn=35/2 (-10+41) =35/2 ×31
1085/2=542.5

2) AP
180,175,170,…25
Sum ot term= ?
First term ,a =180
Common difference d=?
Last term=25
d=175-180=-5

Last term, 25 =a+(n-1)d
25=180+(n-1)-5
25=180+(-5n)+5
25=185-5n
-160=-5n
n=32
Hence, sum of all terms
Sn=n/2(a+l)

=32/2(180+ 25)
=16×205
=3280

3) Roots=1/2 and 3/2
Let $\propto$ =1/2 β=3/2

Assume that the required equation be
$ax^2 + bx^2 + c = 0$

Therefore, a+ β=-b/a and $\alpha\beta$=c/a
Which means the equation is x^2 -(sum of roots)x(product of roots)
$\alpha + \beta$=1/2+3/2=2
$\alpha\beta$=1/2 ×3/2=3/4
X^2-2_x+3/4=0
Muitiply through by 4
=4_x^2-8x+3=0