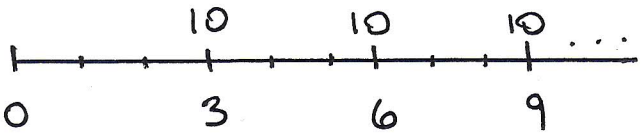
1029)



$PV = 32$

$= 10v^3 + 10v^6 + 10v^9 + \ldots = 32$

$= 10v^3(1 + v^3 + v^6 + \ldots) = 32$

$10v^3\left(\frac{1}{1-v^3}\right) = 32$

$\frac{v^3}{1-v^3} = \frac{32}{10}$

$\frac{1-v^3}{v^3} = \frac{10}{32}$

$\frac{1}{v^3} - 1 = \frac{10}{32}$

$\frac{1}{v^3} = \frac{42}{32}$

$(1+i)^3 = \frac{42}{32}$

second option to find i $\quad \underline{i = 0.09488}$

using equation of perpetuity payments $\quad a_{\overline{\infty}|i} = \frac{1}{i'}$

$1+i' \rightarrow (1+i)^3$

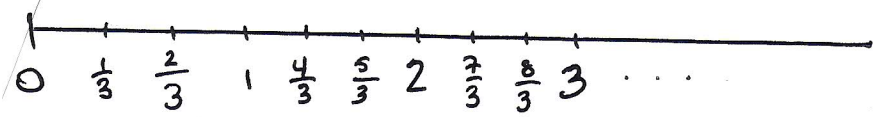
$i' \rightarrow (1+i)^3 - 1$

$PV = 10 \cdot \frac{1}{(1+i)^3 - 1} = 32$

$\frac{1}{(1+i)^3 - 1} = \frac{32}{10}$

$\underline{i = 0.09488}$

1029)



$$v^{\frac{1}{3}} + v^{\frac{2}{3}} + v + v^{\frac{4}{3}} + v^{\frac{5}{3}} + v^2 + \cdots = X$$

$$v^{\frac{1}{3}}\left(1 + v^{\frac{1}{3}} + v^{\frac{2}{3}} + v + \cdots\right) = X$$

$$v^{\frac{1}{3}}\left(\frac{1}{1-v^{\frac{1}{3}}}\right) = X$$

$$(1.09488)^{-\frac{1}{3}}\left(\frac{1}{1-(1.09488)^{-\frac{1}{3}}}\right) = X$$

$$X = 32.5988$$

$$\boxed{\approx 32.6}$$

Second option to calculate X using equation of perpetuity payments

$$PV = a_{\overline{\infty}|i'} = \frac{1}{i'}$$

$$1+i' = (1+i)^{\frac{1}{3}}$$

$$i' = (1+i)^{\frac{1}{3}} - 1$$

$$PV = \frac{1}{(1+i)^{\frac{1}{3}} - 1} = X$$

$$\frac{1}{(1.09488)^{\frac{1}{3}} - 1} = X$$

$$X = 32.5988$$

$$\boxed{\approx 32.6}$$

B