

29. Solution: B

32 is given as PV of perpetuity paying 10 at end of each 3-year period, with first payment at the end of 3 years.

Thus,  $32 = 10 (v^3 + v^6 + \dots) = 10 v^3 (1/1 - v^3)$  (infinite geometric progression), and  $v^3 = 32/42$  or  $(1+i)^3 = 42/32$ . Thus,  $i = .094879785$ .

X is given as the PV, at the same interest rate, of a perpetuity paying 1 at the end of each 4 months, with the first payment at the end of 4 months. Thus,  $X = 1 (v^{1/3} + v^{2/3} + \dots) = v^{1/3} (1/(1 - v^{1/3})) = 32.6$