Bellwork   Alg 2B   Tuesday, October 24, 2017

Use these formulas: $I = prt$ $A = P(1 + \frac{r}{n})^{nt}$ $A = Pe^{rt}$

1. You invest \$20,000 in an account that pays 4% annual interest. Find the amount of money you will have at the end of 30 years if you calculate interest as follows:

a) Simple Interest   b) Interest compounded monthly   c) Interest compounded continuously

2. Assuming you have the same situation as in problem #1, find the number of years, to the nearest hundredth, that it will take for you to end up with \$250,000 if you get interest compounded continuously.

3. The sum of four consecutive positive even integers is x. In terms of x, what is the sum of the second and third integers?

A. $\frac{x - 12}{4}$ B. $\frac{x - 6}{2}$ C. $2x + 6$ D. $\frac{x}{2}$ E. $\frac{x^2 - 3x}{4}$

4. Alice had to read 350 pages of a book over the weekend. If on Sunday, she read 50 pages more than half the amount she read on Saturday, how many pages did she read on Saturday?

A. 150   B. 175   C. 200   D. 225   E. 250

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Use these formulas: $I = prt$ $A = P(1 + \frac{r}{n})^{nt}$ $A = Pe^{rt}$

1. You invest $20,000 in an account that pays 4% annual interest. Find the amount of money you will have at the end of 30 years if you calculate interest as follows:

a) Simple Interest   b) Interest compounded monthly   c) Interest compounded continuously

$I = 20,000(.04)(30) = 24,000$

$20,000 + 24,000$

$= \$44,000$

$20,000\left(1 + \frac{.04}{12}\right)^{12 * 30}$

$= \$66,269.96$

$20,000\, e^{.04 * 30}$

$= \$66,402.34$

2. Assuming you have the same situation as in problem #1, find the number of years, to the nearest hundredth, that it will take for you to end up with $250,000 if you get interest compounded continuously.

$\dfrac{250,000}{20,000} = \dfrac{20,000\, e^{(.04)t}}{20,000}$

$12.5 = e^{.04t}$

use graphing calculator and either the table of graph to find intersection

$t = 63.14$ yrs

3. The sum of four consecutive positive even integers is x. In terms of x, what is the sum of the second and third integers?

A. $\dfrac{x-12}{4}$ B. $\dfrac{x-6}{2}$ C. $2x+6$ (D.) $\dfrac{x}{2}$ E. $\dfrac{x^2 - 3x}{4}$

$(N) + (N+2) + (N+4) + (N+6) = X$

$4N + 12 = X$

$4N = X - 12$

$N = \dfrac{X-12}{4}$

$N = \dfrac{X}{4} - 3$

$(N+2) + (N+4)$

$= \dfrac{X}{4} - 3 + 2 + \dfrac{X}{4} - 3 + 4$

$= \dfrac{X}{4} - 1 + \dfrac{X}{4} + 1$

$= \dfrac{X}{4} + \dfrac{X}{4} = \dfrac{2X}{4} = \left(\dfrac{X}{2}\right)$

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$X = $ # pages read on SAT

$\dfrac{X}{2} + 50 = $ # pages read on SUN

$X + \dfrac{X}{2} + 50 = 350$

$\phantom{X + \dfrac{X}{2}} - 50 \quad\quad -50$

$\dfrac{2}{3} \cdot \dfrac{3X}{2} = 300 \cdot \dfrac{2}{3}$

$X = 200$

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