

1. Find the amount in an investment of 1000 dollars after 3 years if it gives 5 percent return per year. You can leave your answer as a power. How much must be invested to get 2000 under the same conditions?

Solution

Use the equation $A(t) = P \left(1 + \frac{r}{n}\right)^{nt}$ with $P = 1000$, $r = 5/100 = 0.05$, $t = 3$, $n = 1$.

We get $A(3) = 1000(1 + 0.05)^3 = 1000(1.05)^3$.

You can leave your answer like that but the value is 1157.63 dollars.

If we want 2000 dollars, we can use the same equation with $A(3) = 2000$ and P unknown.

We get $2000 = P(1.05)^3 \implies P = 2000/(1.05^3)$.

You can leave it like that but the answer is $2000/(1.05^3) = 1727.68$ dollars.