

# AI-01408 Sustainable Investment Formula

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⋮ Tags	Investing
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How much money to invest to sustain a \$2000 withdrawal per month on an investment with a yield of 15% annually? What will be the balance at the end of 3 years.

Let me solve this step by step.

1. First, let's calculate the required investment principal:

- Annual withdrawal =  $\$2,000 \times 12 = \$24,000$
- Annual yield rate =  $15\% = 0.15$
- Required principal = Annual withdrawal  $\div$  Annual yield rate
- Required principal =  $\$24,000 \div 0.15 = \$160,000$

1. Now let's calculate the balance after 3 years:

- Initial balance =  $\$160,000$
- Annual interest earned =  $\$160,000 \times 0.15 = \$24,000$
- Annual withdrawal =  $\$24,000$
- Net annual change =  $\$0$  (interest earned equals withdrawals)
- Balance after 3 years =  $\$160,000$

Therefore:

- You need to invest  $\$160,000$  initially

- The balance will remain \$160,000 after 3 years since the annual interest earned (\$24,000) exactly equals the annual withdrawals (\$24,000)

Note: This calculation assumes:

- A constant 15% annual return (which is quite optimistic for most investments)
- Interest is earned at the same rate the withdrawals are made
- No taxes or fees are considered
- No inflation adjustment is included

Would you like me to analyze how the numbers would change with different assumptions?