Simple Interest: Earning and Paying Interest

Apply the skill to decisions and designs

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Simple interest uses only original principal: $I = Prt$, with annual rate r as a decimal and time t in years. At 4%, 500 dollars for 6 months has $t = 1/2$, $I = 500(0.04)(1/2) = 10$ dollars and balance 510 dollars.

Worked example

An account has principal \$500.00, annual simple rate 4%, and term $\frac{1}{2}$ years. Find interest and final balance.

1. Annual interest: $500(4/100) = 20$ dollars.
2. $I = Prt = 500(4/100)(\frac{1}{2}) = 10$ dollars.
3. $A = P + I$: $500 + 10 = 510$ dollars.
Answer: Interest \$10.00; balance \$510.00.

Practice Problems

Show your thinking.

1. Option A charges 5% simple annual interest on \$600.00 for 2 years. Option B charges \$70.00 total interest. Which is cheaper and by how much?

2. A loan has principal \$800.00, annual simple rate 4%, and term $\frac{1}{2}$ years. Find interest and final balance.

3. Option A charges 3% simple annual interest on \$1000.00 for $\frac{3}{2}$ years. Option B charges \$55.00 total interest. Which is cheaper and by how much?

4. A loan earns \$144.00 simple interest in 2 years at 6% annually. Find the original principal and final balance.

5. A deposit on \$700.00 at 8% simple interest runs $\frac{1}{4}$ years. Kai compounds the interest each year. Find the correct simple interest and balance.

6. Option A charges 5% simple annual interest on \$1400.00 for 1 year. Option B charges \$80.00 total interest. Which is cheaper and by how much?

7. For a 600 dollar loan over 6 months, plan A charges 6% annual simple interest. Plan B charges 4% annual simple interest plus a 10 dollar fee. Compare total costs.

8. A one-year simple-interest plan pays 5%. What principal earns exactly 35 dollars interest, and what balance results?

Answer Key

1. Option A by $10.00.
2. Interest $16.00; balance $816.00.
3. Option A by $10.00.
4. Principal $1200.00; balance $1344.00.
5. Interest $14.00; balance $714.00.
6. Option A by $10.00.
7. A costs 18 dollars; B costs 22 dollars; A is 4 dollars cheaper.
8. Principal 700 dollars; balance 735 dollars.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Annual interest: $600(5/100) = 30$ dollars.
2. Option A total simple interest: $I = 600(5/100)(2) = 60$ dollars.
3. Option B total interest is $70.00. B minus A: $70 - 60 = 10$ dollars. Since $60 < 70$, option A is cheaper by $10.00.

Problem 2

1. Annual interest: $800(4/100) = 32$ dollars.
2. $I = Prt = 800(4/100)(\frac{1}{2}) = 16$ dollars.
3. $A = P + I$: $800 + 16 = 816$ dollars.

Problem 3

1. Annual interest: $1000(3/100) = 30$ dollars.
2. Option A total simple interest: $I = 1000(3/100)(\frac{3}{2}) = 45$ dollars.
3. Option B total interest is $55.00. B minus A: $55 - 45 = 10$ dollars. Since $45 < 55$, option A is cheaper by $10.00.

Problem 4

1. The interest factor is $rt = (6/100)(2) = \frac{3}{25}$.
2. Recover principal $P = I/(rt)$: $144 \div (\frac{3}{25}) = 1200$ dollars.
3. Final balance $A = P + I$: $1200 + 144 = 1344$ dollars.

Problem 5

1. Annual interest: $700(8/100) = 56$ dollars.
2. $I = Prt = 700(8/100)(\frac{1}{4}) = 14$ dollars.
3. $A = P + I$: $700 + 14 = 714$ dollars.

Problem 6

1. Annual interest: $1400(5/100) = 70$ dollars.
2. Option A total simple interest: $I = 1400(5/100)(1) = 70$ dollars.
3. Option B total interest is $80.00. B minus A: $80 - 70 = 10$ dollars. Since $70 < 80$, option A is cheaper by $10.00.

Problem 7

1. Time $6/12 = 1/2$ year; A interest $600(0.06)(1/2) = 18$ dollars.
2. B interest $600(0.04)(1/2) = 12$ dollars; with fee $12 + 10 = 22$ dollars.
3. B minus A $22 - 18 = 4$ dollars, so A is cheaper.

Problem 8

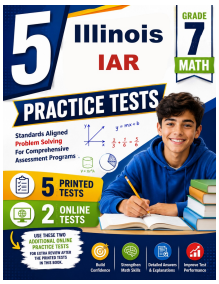
1. $I = Prt$ gives $35 = P(0.05)(1)$.
2. $P = 35/0.05 = 700$ dollars.
3. Balance $700 + 35 = 735$ dollars; check $700(0.05) = 35$ dollars.

TESTINAR

Keep Building Grade 7 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 7 books



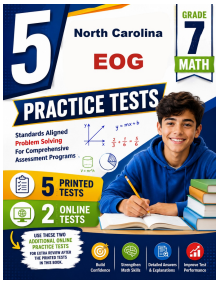
ILLINOIS IAR

5 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



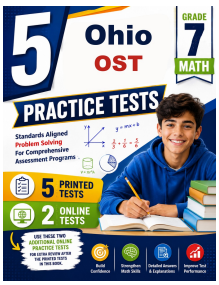
NORTH CAROLINA EOG

5 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



OHIO OST

5 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 7 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/7