

Complete all questions. Complete questions #4-10 on a separate sheet of paper

1. Express the following interest rates as (r) in the simple interest formula.

- a) 6% b) 4.5% c) 1.25% d) 0.85% e) 32%
- $r = 0.06$ $r = 0.045$ $r = 0.0125$ $r = 0.0085$ $r = 0.32$

2. Express the following lengths of time t in the simple interest formula.

- a) 18 months b) 16 weeks c) 88 days d) 4 years e) 52 weeks
- $t = \frac{3}{2}$ (or $\frac{18}{12}$) $t = \frac{16}{52}$ (or $\frac{4}{13}$) $t = \frac{88}{365}$ $t = 4$ $t = \frac{52}{52}$
3. Complete the following chart.
- $t = 1$

Principal (\$)	Interest rate %	Time	Interest Earned (\$)	Total Amount (\$)
2000	4.5	3 months = $\frac{1}{4}a$	22.50	2022.50
550	0.5	36 months = $3a$	8.25	558.25
1500	1.5	14.2a = 14a, 81 days	320	1820.00
4513.89	7.2	16 weeks	100	4613.89
2500	7 $\frac{1}{2}$	18 months	275	2775.00
1239.20	6.75	240 days	55	1294.20
10000 (approx 10,870)	10 $\frac{15}{18}$ %	6 weeks	125	10125.00
780	1.3	5a, 263 days	58	838.00

$I = 2000(0.045)(\frac{3}{12})$
 $I = 550(0.005)(3)$
 $t = 320 \div (1500 \times 0.015)$
 $P = 100 \div (0.072 \times 16 \div 52)$
 $r = 275 \div (2500 \times 1.5)$
 $P = 55 \div (0.0675 \times 240 \div 365)$
 $r = 125 \div (10000 \times 6 \div 52)$
 $t = 58 \div (780 \times 0.013)$

4. \$300 is invested for 2.5 years at 6% simple interest. How much interest is earned?
 $I = 300(0.06)(2.5) = 45$ \therefore \$45 is earned in interest.
5. Joe borrowed \$500 from his parents to buy an ipod. They charged him 2.5% simple interest. He paid them back in 14 months. How much interest did he pay them? How much did he pay them in total?
 $I = 500(0.025)(14 \div 12) = 14.58$ \therefore Interest was \$14.58 total was \$514.58.
6. Peter invested in a GIC that paid 3.25% simple interest. In 36 months, he earned \$485. How much did he invest originally?
 $P = 485 \div (0.0325 \times 3) = 4974.36$ \therefore he invested \$4974.36.
7. What rate of simple interest is needed for \$700 to double, in 3 years?
 $P = 700, I = 700$ $r = 700 \div (700 \times 3) = 33.3\%$ \therefore a rate of 33 $\frac{1}{3}$ % is needed.
8. Kadeem's investment matured from \$1300 to \$1750. It was invested at a simple interest rate of 4.25%. How long was it invested for?
 $P = 1300, I = 450$ $t = 450 \div (1300 \times 0.0425) = 8.14 \Rightarrow 8$ years 53 days.
9. \$4500 was invested at a 5 $\frac{3}{8}$ % simple interest for 300 days. How much interest was earned? What was the total amount of the investment?
 $I = 4500(0.05375) \times 300 \div 365 = 198.80$ \therefore \$198.80 interest
 \$4698.80 total amount
10. \$600 is invested at 4% simple interest for 2 years.
- a) How much interest is earned? $600(0.04)(2) = 48$ interest.
- b) If the interest rate is doubled to 8% is the interest earned doubled? yes.
- c) If the time was doubled to 4 years, would the interest earned be doubled? yes.