— Solutions KEY —

Extra Chapter 1 Practice

Complete all questions showing all your work and checking that your answers are correct.

1. Rachel invests $6500 at 7.3% **simple interest** for 7 years.
   a. How much interest does she earn?

$I = Prt$

$I = (6500)(0.073)(7)$

$I = \$3321.50$

Answer: $3321.50

   b. What is the total value of her investment?

$A = P + I$

$= 6500 + 3321.50$

$A = \$9821.50$

Answer: $9821.50

2. Genevieve invests $3000 at 6.5% **simple interest** and earns $840 in interest. How long was the money invested in years and days?

$I = Prt$

$840 = (3000)(0.065)t$

$840 = 195t$

$\frac{840}{195} = \frac{195t}{195}$

$t = 4.3077$ years

$= 4$ yrs 0.3077×365

$t = 4$ yrs 112 days

Answer: 4 years, 112 days

3. Colleen invets $935 at **simple interest** for 32 weeks. At the end of this time she has $960.89. What was the interest rate?

$32 \text{ weeks} = \frac{32}{52} \text{ years} = 0.6154 \text{ yrs}$

$I = A - P$

$= 960.89 - 935$

$I = 25.89$

$I = Prt$

$25.89 = (935)(r)(0.6154)$

$25.89 = 575.40r$

$\frac{25.89}{575.40} = \frac{575.40r}{575.40}$

$r = 0.045 \times 100 = 4.5\%$

Answer: 4.5%

4. Lynn invests $9000 at 18% interest **compounded monthly** for 7 years.

a. How much is her investment worth?

$$A = P(1+i)^n$$
$$A = 9000\left(1+\frac{0.18}{12}\right)^{7\times 12}$$
$$A = 9000(1+0.015)^{84}$$
$$A = 9000(1.015)^{84}$$
$$A = 9000(3.4925895)$$
$$A = \$31433.31$$

Answer: $31433.31

b. How much interest did she earn?

$$I = A - P$$
$$= 31433.31 - 9000$$
$$I = \$22433.31$$

Answer: $22433.31

5. Briana invests some money at 5.2% interest **compounded annually**. After 9 years her Investment has grown to $7058.56. What was the initial investment?

$$A = P(1+i)^n$$
$$7058.56 = P(1+0.052)^9$$
$$7058.56 = P(1.052)^9$$
$$7058.56 = P(1.57812594)$$
$$\frac{7058.56}{1.57812594} \quad \frac{P(1.57812594)}{1.57812594}$$
$$\$4472.75 = P$$

Answer: $4472.75

6. Sonia invests some money at 9.5% interest **compounded daily**. After 4 years she has $1408.73. What was the value of the initial investment? 365

$$A = P(1+i)^n$$
$$1408.73 = P\left(1+\frac{0.095}{365}\right)^{4\times 365}$$
$$1408.73 = P(1.000260274)^{1460}$$
$$\frac{1408.73}{1.462212285} = \frac{P(1.462212285)}{1.462212285}$$
$$\$963.42 = P$$

Answer: $963.42