**Simple & Compound Interest Review Problems**

1. Calculate the simple interest for each of the following:
2. $800 for 8 months at 9%/a
3. $2500 for 3a at 5%/a

Answers:

1. I = Prt

I = 800 x 0.09 x

I = $54

1. I = Prt

= 2500 x 0.05 x 3

= $375

1. Calculate the future value and interest earned on each of the following investments
2. $1200 invested at 8%/a compounded semi-annually for 3 a
3. $550 invested at 6%/a compounded quarterly for 2 a

Answer

1. P = 1200

r= 0.08

n= 2

t=3

A= P( 1 + )n x t

A = 1200( 1 + )2x3

A = 1200( 1.04)6

A = 1200(1.265319…)

A = $1518.38

I = 1518.38 – 1200

= $318.38

1. P= 550

r = 0.06

n = 4

t = 2

A= P( 1 + )n x t

A = 550( 1 + ) 4x2

A = 550( 1.015)8

A = 550( 1.12649….)

A =$ 619.57

I = 619.57 – 550

= $69.57

1. Jared borrowed $920 from Dylan at a rate of 6.5%/a simple interest and paid Dylan back $928. How many days did Jared have the loan for?

Answer

P = 920

I = 928-920= 8

r= 0.065

t= ?

Using the triangle from the simple interest lesson

t =

t =

t =

t = 0.133779… years

Change time to days t = 0.133779 x 365

= 49 days

Jared had the loan for 49 days.

1. Tanner wants to invest $3500 for 4a. Which of the following interest rates accumulates the greatest amount of interest?
2. 16%/a compounded quarterly
3. 17%/a compounded annually
4. 20.5%/a simple interest

Answer:

1. P = 3500

r = 0.16

n = 4

t = 4

A = 3500( 1 + )4x4

A = 3500( 1.04)16

A = 3500 (1.87298..)

A= 6555.43

I = 6555.43 – 3500

= $3055.43

1. P = 3500

r= 0.17

n = 1

t= 4

A = 3500( 1 + )1x4

A = 3500( 1.17)4

A = 3500(1.873887..)

A = 6558.61

I = 6558.61 – 3500

= 3058.61

1. I = Prt

I = 3500 x 0.205 x 4

I = 2870

Option B gives the greatest amount of interest.