

2.29.16

Compound and continuous Interest

Warm-up

Solve for x

1) $5 = 3^x$

2) $6 = 2e^x$

Compound

Quarterly , Monthly

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

P= Principal- the starting amount

R=*annual interest Rate*

N=Number of interest periods in a year

T= Time

A= Amount after years

Continuously

$$A = Pe^{rt}$$

P= Principal- the starting amount

R=*annual interest Rate*

T= Time

A= Amount after years

Jason recently inherited \$30,000. He has a couple of savings plans to choose from.

Plan 1

5.5% interest

Compounded Quarterly for 13 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 2

4.6% interest

Compounded Monthly for 13 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 3

4.21% interest

Compounded Continuously for 13 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Jason wants to know if he can invest \$900,000 in his lifetime with plan 3. Jason is currently 60 years old. Justify his answer.

Quarterly, Monthly

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

P= Principal- the starting amount

R=*annual interest Rate*

N=Number of interest periods in
a year

T= Time

A= Amount after years

Continuously

$$A = Pe^{rt}$$

P= Principal- the starting amount

R=*annual interest Rate*

T= Time

A= Amount after years

Jasona recently inherited \$15,000. She has a couple of savings plans to choose from.

Plan 1

5.2% interest

Compounded Quarterly for 12 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 2

4.1% interest

Compounded Monthly for 12 years

How much money would she earn using this plan?
Identify all the variables. Round to the nearest cent.

Plan 3

4.0% interest

Compounded Continuously for 12 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.

Jasona wants to know if she can invest \$1,900,000 in her lifetime with plan 3. Justify her answer.

Sona recently inherited \$20,000. She has a couple of savings plans to choose from.

Plan 1

7.1% interest

Compounded Quarterly for 15 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 2

6.1% interest

Compounded Monthly for 15 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 3

4.51% interest

Compounded Continuously for 15 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.

Sona wants to know if she can invest \$1,500,000 in her lifetime with plan 3. Justify her answer.

Ona recently inherited \$12,000. She has a couple of savings plans to choose from.

Plan 1

4.1% interest

Compounded Quarterly for 17 years

How much money would he earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 2

3.1% interest

Compounded Monthly for 17 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 3

2.51% interest

Compounded Continuously for 17 years

How much money would she earn using this plan?
Identify all the variables. Round to the nearest cent.

Ona wants to know if she can invest \$300,000 in her lifetime with plan 3. Justify her answer.

Exit Slip:

Osona recently inherited \$22,000. She has a couple of savings plans to choose from.

Plan 1

5.1% interest

Compounded Quarterly for 9 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.

Plan 2

4% interest

Compounded Continuously for 9 years

How much money would she earn using this plan?

Identify all the variables. Round to the nearest cent.