

**Topic:** Single deposit, compounded continuously, present value

**Question:** Find the present value of a deposit that, after 8 years, at an annual interest rate of  $3.7\%$ , compounded continuously, will have a value of \$9,209.62.

**Answer choices:**

- A      \$6,875.00
- B      \$6,850.00
- C      \$6,795.00
- D      \$6,800.00



**Solution: B**

Plugging the values we've been given into the future value formula for continuous compounding, we get

$$FV = PVe^{rt}$$

$$9,209.62 = PVe^{(0.037)(8)}$$

$$9,209.62 = PVe^{0.296}$$

Solve for  $PV$ .

$$PV = \frac{9,209.62}{e^{0.296}}$$

$$PV \approx \$6,850.00$$



**Topic:** Single deposit, compounded continuously, present value

**Question:** Find the present value of a deposit that, after 7 years, at an annual interest rate of  $6.2\%$ , compounded continuously, will have a value of \$24,308.85.

**Answer choices:**

- A      \$15,875.00
- B      \$15,700.00
- C      \$15,795.00
- D      \$15,750.00



**Solution: D**

Plugging the values we've been given into the future value formula for continuous compounding, we get

$$FV = PVe^{rt}$$

$$24,308.85 = PVe^{(0.062)(7)}$$

$$24,308.85 = PVe^{0.434}$$

Solve for  $PV$ .

$$PV = \frac{24,308.85}{e^{0.434}}$$

$$PV \approx \$15,750.00$$



**Topic:** Single deposit, compounded continuously, present value

**Question:** Find the present value of a deposit that, after 5 years, at an annual interest rate of  $2.75\%$ , compounded continuously, will have a value of \$10,240.56.

**Answer choices:**

- A      \$8,925.00
- B      \$8,955.00
- C      \$8,945.00
- D      \$8,835.00



**Solution: A**

Plugging the values we've been given into the future value formula for continuous compounding, we get

$$FV = PVe^{rt}$$

$$10,240.56 = PVe^{(0.0275)(5)}$$

$$10,240.56 = PVe^{0.1375}$$

Solve for  $PV$ .

$$PV = \frac{10,240.56}{e^{0.1375}}$$

$$PV \approx \$8,925.00$$

