Topic: Single deposit, compounded continuously, future value

Question: Find the future value of $\$9{,}500$ after 10 years, at an annual interest rate of $1.5\,\%$, compounded continuously.

Answer choices:

A $\$10{,}925.00$

B $\$11{,}036.39$

C $\$11{,}034.33$

D $\$11{,}037.43$

Solution: D

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

$$FV = PVe^{rt}$$

$$FV = 9{,}500e^{(0.015)(10)}$$

$$FV = 9{,}500e^{0.15}$$

$$FV \approx \$11{,}037.43$$

Topic: Single deposit, compounded continuously, future value

Question: Find the future value of $\$13{,}900$ after 5 years, at an annual interest rate of $4.5\,\%$, compounded continuously.

Answer choices:

A $\$17{,}027.50$

B $\$17{,}407.29$

C $\$17{,}321.93$

D $\$17{,}385.43$

Solution: B

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

$$FV = PVe^{rt}$$

$$FV = 13{,}900e^{(0.045)(5)}$$

$$FV = 13{,}900e^{0.225}$$

$$FV \approx \$17{,}407.29$$

Topic: Single deposit, compounded continuously, future value

Question: Find the future value of $\$11{,}400$ after 3 years, at an annual interest rate of $6.5\,\%$, compounded continuously.

Answer choices:

A $\$13{,}854.55$

B $\$13{,}770.63$

C $\$13{,}623.00$

D $\$13{,}832.85$

Solution: A

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

$$FV = PVe^{rt}$$

$$FV = 11{,}400e^{(0.065)(3)}$$

$$FV = 11{,}400e^{0.195}$$

$$FV \approx \$13{,}854.55$$