

Continuous Compounded Interest (Pert) HW (CCIIHW)

- 1) Kimi invests \$4,000 at 3% interest compounded continuously. How much money will she have in 4 years?
- 2) Dash invested \$10,000 at 3% interest compounded continuously. How much will he have after 8 years?
- 3) Ashleigh wants to double her money. She put \$5,000 in a bank account that pays 4% compounded continuously. How long will it take her to double her money? (Round to the nearest tenth.)
- 4) Cyndie invests some money at 2% compounded continuously. If after 6 years she has \$1691.25, what was her initial investment?
- 5) Jenn invests \$2150 at 2% compounded continuously. How many years will it take her to accumulate \$2733.19 in the account?
- 6) Damara invests \$3500 at 2% compounded continuously for 5 years. How much will she have in her account after 5 years?
- 7) Kimi invested in an account paying 4% compounded continuously for 3 years. If the account has \$18,039.95 after 3 years, how much did she put in initially?
- 8) Chelsea put \$7500 into an account paying 5% compounded continuously. She now has \$10,643.01. How long has the money been in the account?
- 9) Dash puts \$4125 into an account. If he keeps the money in the account for 5 years and now has a total of \$4193.89. What is the interest rate?
- 10) Ashleigh put some money into an account paying 4.5% compounded continuously for 10 years. She now has \$3567.91 in the account. How much money did she start the account with?

Solve each equation.

11) $3^{-b} = 3^{-3b}$

12) $2^{3n} = \frac{1}{64}$

13) $4^{-m} = 4^{m-3}$

14) $\left(\frac{1}{6}\right)^{-k} = \frac{1}{36}$

15) $5^{4b} = 98$

16) $2^{p+7} = 30$

17) $15^{n+1} = 18$

18) $3^{n+7} = 15$

19) $\log_8 (-5x - 4) = \log_8 (-2x - 1)$

20) $\log_{20} (2v + 5) = \log_{20} (4v + 7)$

21) $\log_4 (6 - 3x) = \log_4 -x$

22) $\log_{18} (5x - 4) = \log_{18} 3x$

23) $\log (2x^2 + 13x) = \log (-36 + x^2)$

24) $\log_{13} (a^2 + 3) = \log_{13} (-3a + 3)$

25) $\log_{12} (x^2 - 32) = \log_{12} (x - 2)$

26) $\log_{18} (3x^2 - x) = \log_{18} (90 + 2x^2)$

27) $\log_8 (x + 14) + \log_8 x = \log_8 32$

28) $\log_2 (x^2 - 9) - \log_2 5 = 5$

29) $\log_2 7 - \log_2 -2x = 2$

30) $\log_8 4x^2 - \log_8 9 = 2$

31) $\ln (x + 4) - \ln x = 3$

32) $\ln 9 + \ln (x^2 - 6) = 4$

33) $\ln (x + 33) + \ln x = \ln 70$

34) $\ln (x^2 + 10) - \ln 2 = \ln 37$

Continuous Compounded Interest (Pert) HW (CCIIHW)

- 1) Kimi invests \$4,000 at 3% interest compounded continuously. How much money will she have in 4 years?
She will have \$4509.99 in her account after 4 years.
- 2) Dash invested \$10,000 at 3% interest compounded continuously. How much will he have after 8 years?
Dash will have \$12,712.49 in his account after 8 years.
- 3) Ashleigh wants to double her money. She put \$5,000 in a bank account that pays 4% compounded continuously. How long will it take her to double her money? (Round to the nearest tenth.)
It will take approximately 17.3 years for her money to double.
- 4) Cyndie invests some money at 2% compounded continuously. If after 6 years she has \$1691.25, what was her initial investment?
Her initial amount invested was \$1500.
- 5) Jenn invests \$2150 at 2% compounded continuously. How many years will it take her to accumulate \$2733.19 in the account? It will take _____ years.
- 6) Damara invests \$3500 at 2% compounded continuously for 5 years. How much will she have in her account after 5 years?
She will have \$3868.10.
- 7) Kimi invested in an account paying 4% compounded continuously for 3 years. If the account has \$18,039.95 after 3 years, how much did she put in initially?
Kimi put in \$16,000 initially.
- 8) Chelsea put \$7500 into an account paying 5% compounded continuously. She now has \$10,643.01. How long has the money been in the account?
It has been in the account for 7 years.
- 9) Dash puts \$4125 into an account. If he keeps the money in the account for 5 years and now has a total of \$4193.89. What is the interest rate?
The interest rate is 3.5%.
- 10) Ashleigh put some money into an account paying 4.5% compounded continuously for 10 years. She now has \$3567.91 in the account. How much money did she start the account with?
She started with \$2275.

Solve each equation.

$$11) 3^{-b} = 3^{-3b}$$

{0}

$$12) 2^{3n} = \frac{1}{64}$$

{-2}

$$13) 4^{-m} = 4^{m-3}$$

{3
2}

$$14) \left(\frac{1}{6}\right)^{-k} = \frac{1}{36}$$

{-2}

$$15) 5^{4b} = 98 \frac{\log_5 98}{4}$$

$$17) 15^{n+1} = 18$$

$$\log_{15} 18 - 1$$

$$19) \log_8 (-5x - 4) = \log_8 (-2x - 1)$$

$$\{-1\}$$

$$21) \log_4 (6 - 3x) = \log_4 -x$$

No solution.

$$23) \log (2x^2 + 13x) = \log (-36 + x^2)$$

$$\{-9\}$$

$$25) \log_{12} (x^2 - 32) = \log_{12} (x - 2)$$

$$\{6\}$$

$$27) \log_8 (x + 14) + \log_8 x = \log_8 32$$

$$\{2\}$$

$$29) \log_2 7 - \log_2 -2x = 2 \left\{ -\frac{7}{8} \right\}$$

$$31) \ln (x + 4) - \ln x = 3 \left\{ -\frac{4}{1 - e^3} \right\}$$

$$33) \ln (x + 33) + \ln x = \ln 70$$

$$\{2\}$$

$$16) 2^{p+7} = 30$$

$$\log_2 30 - 7$$

$$18) 3^{n+7} = 15$$

$$\log_3 15 - 7$$

$$20) \log_{20} (2v + 5) = \log_{20} (4v + 7)$$

$$\{-1\}$$

$$22) \log_{18} (5x - 4) = \log_{18} 3x$$

$$\{2\}$$

$$24) \log_{13} (a^2 + 3) = \log_{13} (-3a + 3)$$

$$\{0, -3\}$$

$$26) \log_{18} (3x^2 - x) = \log_{18} (90 + 2x^2)$$

$$\{10, -9\}$$

$$28) \log_2 (x^2 - 9) - \log_2 5 = 5$$

$$\{13, -13\}$$

$$30) \log_8 4x^2 - \log_8 9 = 2$$

$$\{12, -12\}$$

$$32) \ln 9 + \ln (x^2 - 6) = 4 \left\{ \frac{\sqrt{e^4 + 54}}{3}, -\frac{\sqrt{e^4 + 54}}{3} \right\}$$

$$34) \ln (x^2 + 10) - \ln 2 = \ln 37$$

$$\{8, -8\}$$