Review Exercise Set 14

Exercise 1: Graph the given exponential function by making a table of coordinates and plotting the points.

\[ f(x) = 2^{x-1} \]

Exercise 2: Select the exponential function that matches the function depicted in the graph below.

A) \( f(x) = 2^{x+2} - 1 \)
B) \( f(x) = -2^{x+2} + 1 \)
C) \( f(x) = -2^{x-2} + 1 \)
D) \( f(x) = 2^{x+2} - 1 \)
Exercise 3: Graph the given exponential function by using transformations.

\[ g(x) = e^{x+1} - 2 \]

Exercise 4: Graph the given exponential function by using transformations.

\[ h(x) = -e^{2x} + 1 \]

Exercise 5: Find the value of $6000 deposited into an account over a 5 year period if the account has an interest rate of 7.25% and is compounded monthly. Round your answer to the nearest cent.
Review Exercise Set 14 Answer Key

Exercise 1: Graph the given exponential function by making a table of coordinates and plotting the points.

\[ f(x) = 2^{x-1} \]

Select values for \( x \) and substitute them into \( f(x) \)

<table>
<thead>
<tr>
<th>( x )</th>
<th>( f(x) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>( 2^{-2-1} = 2^{-3} = \frac{1}{8} )</td>
</tr>
<tr>
<td>-1</td>
<td>( 2^{-1-1} = 2^{-2} = \frac{1}{4} )</td>
</tr>
<tr>
<td>0</td>
<td>( 2^{0-1} = 2^{-1} = \frac{1}{2} )</td>
</tr>
<tr>
<td>1</td>
<td>( 2^{1-1} = 2^0 = 1 )</td>
</tr>
<tr>
<td>2</td>
<td>( 2^{2-1} = 2^1 = 2 )</td>
</tr>
</tbody>
</table>

Plot points and sketch the graph
Exercise 2: Select the exponential function that matches the function depicted in the graph below.

A) \( f(x) = 2^{-x^2} - 1 \)
B) \( f(x) = -2^{x^2} + 1 \)
C) \( f(x) = -2^{x^2} + 1 \)
D) \( f(x) = 2^{x^2} - 1 \)

Exercise 3: Graph the given exponential function by using transformations.

\[ g(x) = e^{x+1} - 2 \]
Exercise 4: Graph the given exponential function by using transformations.

\[ h(x) = -e^{2x} + 1 \]

Exercise 5: Find the value of $6000 deposited into an account over a 5 year period if the account has an interest rate of 7.25% and is compounded monthly. Round your answer to the nearest cent.

Identify the information given

Principal (P) = $6,000
Rate (r) = 7.25% or 0.0725
Time (t) = 5 years
Compounding factor (n) = 12

Substitute the known values into the compound interest formula

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

\[ = 6000\left(1 + \frac{0.0725}{12}\right)^{12(5)} \]

\[ = 6000(1.006)^{60} \]

\[ \approx 8612.11 \]

There would be $8,612.11 in the account after 5 years.