**Extra Practice Problems**

**(Sections 10.1,10.2,11.1,11.2)**

1. **Let http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math126.gif, http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math127.gif,http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math128.gif,and http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math129.gif , find the following:**

( a ) http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math139.gif

( b ) http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math141.gif

**2. A small stone is thrown into still water and create a circular wave. The radius r of the water wave increases at the rate of 2 cm per second.   
  
a) Find an expression for the radius r in terms of time t (in seconds) after the stone was thrown.   
  
b) If A is the area of the water wave, what is the meaning of the composition (A o r)(t)?   
  
c) Find the area A of the water wave after 60 seconds.**

**3. Suppose that http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math178.gif. Find possible formulas for http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math065.gifand http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math079.gif(There may be more than one possible answer. Assume http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math179.gifand http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math180.gif)**

( a )

http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math187.gif

( b ) http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math181.gif

**4.** Complete the table given http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c10/math/math191.gif.

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**5. The function F = g(C) = 32 + 9/5C converts a temperature in degrees Celsius to degrees Fahrenheit.**

**( a ) Explain how you can tell that this function is invertible.**

**( b ) If it invertible, find the inverse function**

**6. Suppose P = f(t) is the population (in thousands) in year t, and that f(7)=13 and f(12)=20.**

**(a)  Find a formula for f(t) assuming f is exponential.**

**(b)  Find a formula for**

**(c)  Evaluate f(25) and (25). Explain what these expressions mean in terms of population.**

**7. Write http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c11/math/math177.gifin the form and state the values of a and p .**

**8. Find possible formulas for the power functions with the properties given**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **( a )**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **x** | **-2** | **-1/2** | **1/4** | **4** | | **H(x)** | **-1/2** | **-8** | **-32** | **-1/8** |   **9. Suppose c is inversely proportional to the square of d. If c = 45 when d = 3, find the constant of proportionality and write the formula for c as a function of d. Use your formula to find c when d=5.** |

**10. State the degree, the number of terms, and describe the long‐run behavior**

**( a ) http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c11/math/math533.gif**

**11. Find the zeros of the functions.**

**( a ) http://edugen.wileyplus.com/edugen/courses/crs6186/connally9780470484753/c11/math/math732.gif**