Reading Questions for Section 9.1 due June 16 (17 pts) Name_____

In this section, you need to know how to write expressions involving powers.
Complete the boxes:

(1) 1. The expression $13\sqrt[3]{x}$ can be written as $13x^{\square}$

(2) 2. The expression $\sqrt{\frac{25}{x^3}}$ can be written as $\square x^{\square}$

(2) 3. The expression $(5x)^2$ can be written as $\square x^{\square}$

(2) 4. The expression $\frac{x^{20}}{4x^{-5}}$ can be written as $\square x^{\square}$

(6) 5. Match the power function family with its general shape

___ $y = x^3, x^5, x^7, \ldots$
___ $y = x^{-3}, x^{-5}, x^{-7}, \ldots$
___ $y = x^2, x^4, x^6, \ldots$
___ $y = x^{-2}, x^{-4}, x^{-6}, \ldots$
___ $y = x^{1/3}, x^{1/5}, x^{1/7}, \ldots$
___ $y = x^{1/2}, x^{1/4}, x^{1/6}, \ldots$

A.  B.  C.  D. 

E.  F. 

(1) 6. The text chose to explore the shape of power functions of the form $y = kx^p$ with $k = 1$.
What do all of these shapes have in common?

- o All of the graphs of $y = x^p$ have domain all real numbers
- o All of the graphs of $y = x^p$ have range all real numbers
- o All of the graphs of $y = x^p$ have the same y-intercept.
- o All of the graphs of $y = x^p$ pass through the point (1, 1).
- o All of the graphs of $y = x^p$ pass through the origin

(2) 7. Which have both horizontal and vertical asymptotes? SELECT ALL that apply.

- o $y = x^3, x^5, x^7, \ldots$
- o $y = x^{-3}, x^{-5}, x^{-7}, \ldots$
- o $y = x^2, x^4, x^6, \ldots$
- o $y = x^{-2}, x^{-4}, x^{-6}, \ldots$
- o $y = x^{1/3}, x^{1/5}, x^{1/7}, \ldots$
- o $y = x^{1/2}, x^{1/4}, x^{1/6}, \ldots$

(1) 8. What great scientist is mentioned in the reading of Section 9.1?

- o Euler
- o Pythagoras
- o Torricelli
- o Malthus