# Unit 2 HW 24

Name_____Key_____          Date_____          Period_____

1. Simplify   $-16(-4)^2 + 28(-4) - 57$

   $-425$

2. Solve   $\dfrac{2}{3x-13} = \dfrac{5}{3x+8}$

   $X = 9$

3. Sparbucks has decided to charge an annual fee.  It then charges you a smaller fee per beverage.  My friend Neveah has purchased 12 drinks at Sparbucks, and has paid $37. I have only purchased 6 drinks, and have paid $22.

   a.   Write an equation to represent the charges for Sparbucks.   See teacher

   b.   How much does Sparbucks charge for a drink?   $2.50

   c.   How much is their annual fee?   $7

   d.   If I want to buy 23 drinks, how much will I have to pay Sparbucks in total?

   $64.50

   e.   If someone paid $92 this year, how many drinks have they purchased?

   34

**Simplify. Make all exponents positive.**

4. $\dfrac{x^5y^6}{xy^2}$

$x^4y^4$

5. $\dfrac{52x^6}{13x^{-7}}$

$4x^{13}$

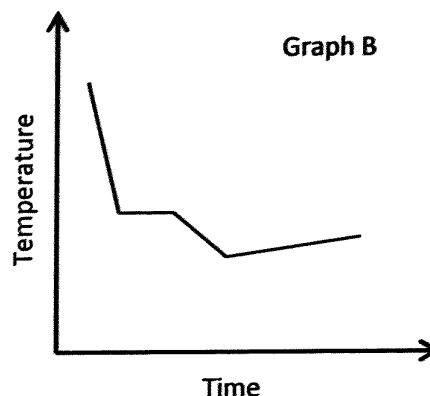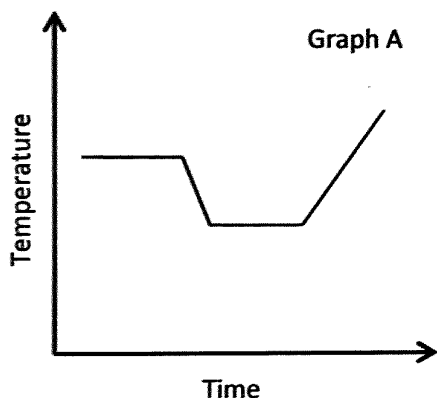6. $(2x^3y^{-3})^{-2}$
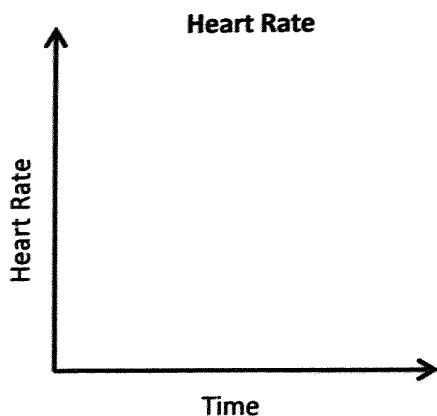
$\dfrac{y^6}{4x^6}$

7. $(2cd^4)^2(cd)^5(c^{-4}d^3)^0$

$4c^7d^{13}$

8. Which graph below shows that the air temperature fell steadily, leveled off, fell again, and then increased slightly? _____B_____

**Graph A**

Temperature

Time

**Graph B**

Temperature

Time

9. Sketch the graph for the folowing situation:

   a. The heart rate of someone walking, then running, then resting.

      *see teacher*

**Heart Rate**

Heart Rate

Time

   b. The height of a basketball being dropped from a window and bouncing until it comes to rest.

**Height of Bouncing Ball**

Height

Time