Name _____

2-1A Lesson Master

SKILLS Objective A

In 1 and 2, write a variation equation representing the situation.

1. y varies directly as the third power of x.   _____

2. The area A of a regular hexagon is directly proportional to the square of
   the length s of a side.   _____

3. **Fill in the Blanks** If $v = \frac{2}{3} w^4$, then _____ varies directly as the _____ power of

   _____ , and _____ is the constant of variation.

SKILLS Objective B

4. Suppose y varies directly as x, and y is 12 when x is 2.4. Find y when
   x is 9.1.   _____

5. Suppose A is directly proportional to the cube of c, and $A = 192.8$ when
   $c = 1.2$. Find A when c is 9.1.   _____

6. Suppose S is directly proportional to the square of r, and $S = 100\pi$
   when $r = 5$. Find the constant of variation.   _____

USES Objective F

**In 7–9, determine whether the two variables are (approximately) directly
proportional.**

7. The height of a batted baseball and the time after it is hit.   _____

8. The amount of rain that falls and the number of hours it has
   been raining.   _____

USES Objective G

9. Camille babysits for her neighbors. One week they paid her $20 for
   $2\frac{1}{2}$ hours. If the pay is directly proportional to the hours worked, how
   much would she make for 4 hours of babysitting?   _____

10. The amount of electric power generated by a windmill varies directly as
    the cube of the wind speed. A particular windmill generates 640 watts of
    power when the wind is 8 miles per hour.

    a. Find the constant of variation and use it to write a variation formula.   _____

    b. How much power will the windmill generate in a 12-mph wind?   _____