1. Does the following represent a direct or an inverse variation?

x	3	1.5	-0.375	12
y	-0.7	-1.4	5.6	-0.175

2. Decide whether the data show inverse variation. If they do, find the missing value.

x	0.2	-0.5	?	-1
y	10	-4	0.25	-2

3. Write an inverse variation to model the data in the table.

x	3	5	9	10
y	30	18	10	9

4. The time t required to drive a certain distance varies inversely as the speed r. If it takes 4 hours to drive the distance at 50 miles per hour, how long will it take to drive the same distance at 25 miles per hour?

5. If a is inversely proportional to the square of b and a is $\dfrac{1}{12}$ when b is 6, find a when b is 3.

[A] $\dfrac{1}{48}$ [B] $\dfrac{1}{3}$ [C] $-\dfrac{35}{12}$ [D] $\dfrac{1}{24}$

6. The data vary inversely. One point is $(4, 1.4)$. Which point satisfies this same equation?

    [A] $(5, 1.5)$ [B] $(6, 2.1)$ [C] $(3, 1.2)$ [D] $(1.12, 5)$

7. Which set of data models an inverse variation?

    [A] $x_1 = 2.8;\ y_1 = 4.2$ [B] $\dfrac{x_1}{y_1} = 4;\ \dfrac{x_2}{y_2} = 4$ [C] $x_1 = 3.7;\ y_1 = 6$ [D] $x_1 y_1 = 4;\ x_2 y_2 = 4$

          $x_2 = 5.6;\ y_2 = 8.4$ $x_2 = 5.1;\ y_2 = 7.4$

8. Compare the quantity in Column A with the quantity in Column B.
    $xy = k$

    <u>Column A</u>   <u>Column B</u>

    x y

    [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

    [C] The two quantities are equal.

    [D] The relationship cannot be determined on the basis of the information supplied.

9. Which equation is an inverse variation?

    [A] $y = 2.5x$ [B] $x = 2.5y$ [C] $\dfrac{y}{x} = 2.5$ [D] $\dfrac{x}{y} = 2.5$ [E] $xy = 2.5$

10. The speed of a gear varies inversely with the number of teeth. Gear A has 40 teeth and a speed of 6000 rpm (revolutions per minute). If gear B meshes with gear A and has 25 teeth, how fast will gear B turn, in rpm?

[1] inverse variation

[2] 8

[3] $xy = 90$

[4] 8 hr

[5] B

[6] D

[7] D

[8] D

[9] E

[10] 9600 rpm