Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Inverse Variation

____ 1. Suppose that x and y vary inversely, and $x = 3$ when $y = 4$. Write the function that models the inverse variation.

a. $y = \frac{1}{x}$

b. $y = \frac{7}{x}$

c. $y = \frac{12}{x}$

d. $y = 1.33x$

____ 2. Suppose that w and t vary inversely and that $t = \frac{3}{10}$ when $w = 9$. Write a function that models the inverse variation and find t when $w = 3$.

a. $t = \frac{3}{10w}; \frac{3}{10}$

b. $t = \frac{1}{30w}; \frac{1}{270}$

c. $t = \frac{3}{10w}; \frac{9}{10}$

d. $t = \frac{27}{10w}; \frac{9}{10}$

____ 3. Suppose that x and y vary inversely, and $x = 9$ when $y = 10$. Write the function that models the inverse variation.

a. $y = 1.11x$

b. $y = \frac{1}{x}$

c. $y = \frac{90}{x}$

d. $y = \frac{19}{x}$

____ 4. Suppose that m and r vary inversely and that $r = \frac{8}{3}$ when $m = 2$. Write a function that models the inverse variation and find r when $m = 7$.

a. $r = \frac{16}{3m}; \frac{16}{21}$

b. $r = \frac{8}{3m}; \frac{16}{21}$

c. $r = \frac{8}{3m}; \frac{8}{3}$

d. $r = \frac{4}{3m}; \frac{2}{3}$

____ 5. Suppose that c and d vary inversely and that $d = \frac{1}{6}$ when $c = 8$. Write a function that models the inverse variation and find d when $c = 4$.

a. $d = \frac{4}{3c}; \frac{1}{3}$

b. $d = \frac{1}{6c}; \frac{1}{3}$

c. $d = \frac{1}{48c}; \frac{1}{384}$

d. $d = \frac{1}{6c}; \frac{1}{6}$

____ 6. Suppose that x and y vary inversely, and $x = 3$ when $y = 7$. Write the function that models the inverse variation.

a. $y = \frac{21}{x}$

b. $y = \frac{10}{x}$

c. $y = 2.33x$

d. $y = \frac{4}{x}$

____ 7. Suppose that x and y vary inversely and that $y = \frac{5}{3}$ when $x = 4$. Write a function that models the inverse variation and find y when $x = 7$.

a. $y = \frac{5}{3x}; \frac{20}{21}$

b. $y = \frac{20}{3x}; \frac{20}{21}$

c. $y = \frac{5}{12x}; \frac{5}{48}$

d. $y = \frac{5}{3x}; \frac{5}{3}$

____ 8. Suppose that x and y vary inversely, and $x = 10$ when $y = 11$. Write the function that models the inverse variation.

a. $y = \frac{21}{x}$

b. $y = \frac{110}{x}$

c. $y = 1.1x$

d. $y = \frac{1}{x}$

____ 9. A drama club is planning a bus trip to New York City to see a Broadway play. The table represents the cost per person for the bus rental compared to the number of people going on the trip. What function models the data, and how much per person will it cost if 12 students go on the trip?

Number of Students (*n*)	3	6	9	16
Cost per Student (*c*)	$24	$12	$8	$4.5

a. $nc = 72$, \$6

b. $\frac{n}{c} = 72$, \$12

c. $nc = 9$, \$10

d. $\frac{n}{c} = 9$, \$12

____ 10. A soccer team is collecting money to buy their coach a present. The table represents the cost per person for the gift compared to the number of people contributing. What function models the data, and how much per person will it cost if all 40 players contribute?

Number of Players (*n*)	5	8	15	20
Cost per Player (*c*)	$40	$25	$13	$10

a. $nc = 200$, \$5

b. $nc = 400$, \$10

c. $\frac{n}{c} = 200$, \$20

d. $\frac{n}{c} = 100$, \$5

Inverse Variation
Answer Section

1. C
2. D
3. C
4. A
5. A
6. A
7. B
8. B
9. A
10. A