Direct and Inverse Variation

Name: _____ Class: S. 5_____ (   ) Date: _____

1. (a) Set "*y* varies directly as *x*". What is the equation connecting *x* and *y*?
Answer: $y =$

(b) It is given that $x = 4$ when $y = 8$. Move the blue point on the graph to a suitable position. Then click "Find *k*".
k is called the variation constant.
Write down the steps for finding the value of *k*.

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(c) Click "Show movable point". When you move the red point,
(i) is there any changes in the value of *x* and *y*?   Yes   No
(ii) is there any changes in the value of *k*?   Yes   No
(iii) Find the value of *y* when $x = 5$.

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(iv) Find the value of *y* when $x = 9$.

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2. (a) Set "*y* varies inversely as *x*". What is the equation connecting *x* and *y*?
Answer: $y =$

(b) It is given that $x = 4$ when $y = 8$. Move the blue point on the graph to a suitable position. Then click "Find *k*".
k is called the variation constant.
Write down the steps for finding the value of *k*.

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(c) Click "Show movable point". When you move the red point,
(i) is there any changes in the value of *x* and *y*?   Yes   No
(ii) is there any changes in the value of *k*?   Yes   No
(iii) Find the value of *y* when $x = 8$.

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(iv) Find the value of *y* when $x = 16$.

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3. Complete the following table.

	directly	inversely
y varies as x	$y = kx$	$y = \dfrac{k}{x}$
y varies as x^2		
y varies as $\sqrt{x}$		
y varies as x^3		

4. Set "y varies directly as x^2". When $x = 2$, $y = 12$.
   (a) Find the value of the variation constant k.
       Hence, write down an equation connecting x and y.

   (b) Find the value of y when $x = 1$.

5. Set "y varies directly as $\sqrt{x}$". When $x = 9$, $y = 6$.
   (a) Find the value of the variation constant k.
       Hence, write down an equation connecting x and y.

   (b) Find the value of y when $x = 16$.

6. y varies inversely as x^2. When $x = 5$, $y = 8$.

   (a) Write down an equation connecting x and y.

   (b) Find the value of y when $x = 10$.

7. y varies inversely as x^3. When $x = 2$, $y = 6$.

   (a) Write down an equation connecting x and y.

   (b) Find the value of y when $x = 4$.

8. y varies inversely as $\sqrt{x}$. When $x = 9$, $y = 8$.
    (a) Express y in terms of x.

    (b) Find the value of y when $x = 6$.

    (c) Find the value of x when $y = 2$.

9. y varies as x^3. When $x = 16$, $y = 8$.
    (a) Express y in terms of x.

    (b) Find the value of y when $x = 10$.

    (c) Find the value of x when $y = 12$.