Name: $\qquad$ Date: $\qquad$

## Each graph represents an inverse proportion. Find the constant of proportionality-



## Complete.

11. 



Constant of proportionality:
$(1,6)$ $\qquad$ . $\qquad$ $=$ $\qquad$

The constant of proportionality is $\qquad$

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Each graph represents an inverse proportion. Find the constant of proportionality.
12.

13.

14.


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$\qquad$

## Solve an inverse proportion problem graphically.

## Example

A school is holding a career fair in the school auditorium. The time it takes to set up the booths in the school auditorium is inversely proportional to the number of students helping to set up. The graph shows the number of hours, $t$, that it takes $n$ students to set up the booths in the school auditorium.

a) Find the constant of proportionality graphically. Then write an inverse proportion equation.

Use $(2,25)$ to find the constant of proportionality:

$$
\begin{aligned}
t \cdot n & =2 \cdot 25 & & \text { Choose the point }(2,25) . \\
& =50 & & \text { Multiply. }
\end{aligned}
$$


b) Explain what the point $(2,25)$ represents in this situation.

It means it takes_25 students $\quad 2$ hours to set up the booths in the school auditorium.

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## Complete.

15. The amount of time, $t$ hours, it takes to fill a swimming pool with water is inversely proportional to the number of pipes, $n$, used to pump water into the swimming pool. The graph shows the relationship between $t$ and $n$.

a) Find the constant of proportionality from the graph. Then write an inverse proportion equation.

Use ( $\qquad$
$\qquad$ ) to find the constant of proportionality:
$n \cdot t=$ $\qquad$ . $\qquad$ Choose the point ( $\qquad$ ).
$=$ $\qquad$ Multiply.

The constant of proportionality is $\qquad$ .

The inverse proportion equation is $\qquad$
b) Explain what the point $(2,8)$ represents in this situation.

It means that $\qquad$ pipes can fill the swimming pool in $\qquad$ hours.

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## Solve an inverse proportion problem graphically.

16. The air pressure inside a weather balloon, $P$ newton per square meter, is inversely proportional to the volume of gas, $V$ cubic meters, inside the balloon. The graph shows the relationship between $P$ and $V$.

a) Find the constant of proportionality graphically. Then write an inverse proportion equation.
b) Explain what the point $(3,50)$ represents in this situation.

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## Solve an inverse proportion problem graphically.

17. Sophie has a long piece of rope. She needs to cut the rope into shorter pieces. The number of shorter pieces Sophie cuts, $n$, is inversely proportional to the length, $s$ meters, of each of the shorter pieces of rope. The graph shows the relationship between $s$ and $n$.

a) Find the constant of proportionality graphically. Then write an inverse proportion equation.
b) Explain what the point $(4,6)$ represents in this situation.
