

# [12-02-08A-T]

## *Inverse Variation*

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[1] The capacity of a tank is  $27 L$ . It is filled through a pipe. Write the time  $t$  required to fill the tank as a function of the rate of flow  $r$ .

[2] Suppose a tank is filled to capacity by water flowing into it at  $8 \frac{L}{\text{min}}$  for 12 minutes.

- (a) How long will it take to fill the same tank if the rate of flow is doubled?
- (b) Write the time  $t$  required to fill the tank as a function of the rate of flow  $r$ .
- (c) How long will it take to fill the same tank if the rate of flow is  $24 \frac{L}{\text{min}}$  ?
- (d) If the tank must be filled in 18 minutes, what must rate of flow must be used?

[3] Suppose a crew of 6 workers can complete a certain job in 8 hours.

- (a) How long will it take to complete the job if the number of workers is doubled?
- (b) Write the time  $t$  required to complete the job as a function of the number of workers.
- (c) How long will it take to complete the job if only 4 people work?
- (d) If the job must be done in 4 hours, how many workers are required?

[3] Suppose a crew of 6 workers can pave 0.5 miles of highway in one day.

- (a) How long will it take this crew to pave one mile of highway?
- (b) Write the time  $t$  required for this crew to pave  $x$  miles of highway.
- (c) How long will it take this crew to pave 16 miles of highway?
- (d) What length of highway could a crew of 12 pave in one day?