

#1

Averytown is going through an economic downturn and jobs are being lost at a rate of 5 per month. As the mayor of Averytown you need to write a formula to relate the number of months  $c$  to the number of jobs lost  $b$  if there was a one time loss of 5 jobs due to a factory explosion. e.g.  $y=1x$

Show your work

#2

## Choose the best answer

Farmer Andrew needs to figure out how many total cattle  $a$  he will have next year. He counts his cattle  $b$  and knows each will produce 20 calves each year. Write an equation that shows this relationship and can be used to calculate how many cattle Andrew will have next year if Andrew is given 4 cows at the end of the year. e.g.  $y=1x+1$

- $20b=4a$                         $4b=20 + a$
- $a=4b + 20$                         $a=20b + 4$

Show your work

#3

Out at Camp Lauren the squirrels like to sneak and steal sunflower seeds out of the birdfeeder at a rate 17 per hour. Write a formula to find the number seeds lost  $c$  related to the hour  $d$  if a gust of wind blows 6 seeds out of the feeder. e.g.  $y=1x+5$

Show your work

#4

The International Space Station (ISS) relies on solar panels and batteries for its power. When the ISS is in the shadow of the Earth, the battery drains at a rate of 5 power units per hour. Find the formula to relate the number of hours  $w$  to the amount of power loss  $v$  if the ISS gains 1 power unit from a solar flare. e.g.  $y=1x+5$

Show your work

#5

Out at Camp Anthony the squirrels like to sneak and steal sunflower seeds out of the birdfeeder at a rate 15 per hour. Write a formula to find the number seeds lost  $t$  related to the hour  $u$  if the custodian adds 2 seeds to the feeder. e.g.  $y=1x+5$

Show your work

#6

The town water tower is leaking 19 water units per day. Relate the amount of water lost  $o$  and the day  $p$  if 8 units were lost due to theft. e.g.  $y=1x+5$

Show your work

#7

Owen makes \$16 an hour. Write an equation that shows the relationship between the money made  $q$  and the hours worked  $r$  if Owen makes a flat rate of \$9. e.g.  $y=1x+1$

Show your work

#8

## Choose the best answer

Diana sells strawberries out of the back of her van. In order to predict the required stock, write a formula to relate the number of strawberries lost  $q$  to the hour  $r$  if she sells 12 per hour and finds 10 in the back of the fridge. e.g.  $y=1x+5$

- $12r=10q$         $q=-12r+10$
- $q=-10r+12$         $10r=12+q$

Show your work

#9

## Choose the best answer

The International Space Station (ISS) relies on solar panels and batteries for its power. When the ISS is in the shadow of the Earth, the battery drains at a rate of 6 power units per hour. Find the formula to relate the number of hours  $d$  to the amount of power loss  $c$  if the ISS gains 3 power units from a solar flare. e.g.  $y=1x+5$

- $c=-3d+6$         $3d=6+c$
- $c=-6d+3$         $6d=3c$

Show your work

#10

## Choose the best answer

You are taking your grain to market tomorrow and have  $j$  bushels of wheat, and each bushel sells for \$6. Write an equation that shows the relationship between the total worth  $i$ , and the number of bushels if you must first pay \$10 to sell at the market. e.g.  $y=1x+1$

- $6j=10i$                         $i=6j-10$
- $i=10j-6$                         $10j=-6+i$

Show your work

#11

## Choose the best answer

Out at Camp Jack the squirrels like to sneak and steal sunflower seeds out of the birdfeeder at a rate 14 per hour. Write a formula to find the number seeds lost  $i$  related to the hour  $j$  if a gust of wind blows 2 seeds out of the feeder. e.g.  $y=1x+5$

- $i=-14j-2$                         $14j=-2i$
- $i=-2j-14$                         $2j=-14-i$

Show your work

#12

## Choose the best answer

Astronaut Mackenzie needs to do an EVA in her spacesuit and wants to calculate how much oxygen she will be lost at every minute. Mackenzie consumes 8 units of oxygen every minute and she has to use 5 units to purge water in the system. Write an equation to relate the amount of oxygen lost  $t$  and the amount of minutes  $u$  that have passed. e.g.  $y=1x$

- $8u=5t$                         $t=-5u+8$
- $5u=8+t$                         $t=-8u-5$

Show your work

Question	Answer
#1	$b = -5c - 5$
#2	choice 4
#3	$c = -17d - 6$
#4	$v = -5w + 1$
#5	$t = -15u + 2$
#6	$o = -19p - 8$
#7	$q = 16r + 9$
#8	choice 2
#9	choice 3
#10	choice 2
#11	choice 1
#12	choice 4