Snow Day Packet

Mrs. McCauley's Algebra I

STORY PROBLEMS WITH INTEGERS

Read carefully and solve.

1. When Steve woke up. His temperature was 102° F. Two hours later it was 3° lower. What was his temperature then?

2. An elevator is on the twentieth floor. It goes down 11 floors and then up 5 floors. What floor is the elevator on now?

3. A deep-sea exploring ship is pulling up a diver at the rate of 25 feet per minute. The diver is 200 feet below sea level. How deep was the diver 10 minutes ago?

4. If it is 5° outside and the temperature will drop 17° in the next six hours, how cold will it get?

5. Josie has $47 left on her checking account. If she writes a check for $55, what will Josie's balance be?

6. Joe is playing a game with a regular die. If the number that turns up is even, he will gain 5 times the number that comes up. If it is odd, he will lose 10 times the number that comes up. He tosses a 3. Express the results as an integer.

7. It will be – 12° tonight. The weatherman predicts it will be 25° warmer by noon tomorrow. What will the temperature be by noon tomorrow?

8. The average temperature at the South Pole is – 45° F. The average temperature on the Equator is 92° F. How much warmer is the average temperature on the Equator than at the South Pole?

9. Felix reported that the coldest day on record for his town was five times colder than yesterday's temperature, –4° C. What was the temperature of the coldest day on record in Felix's town?

10. The elevation of Mt. Everest is 29,028 feet. The elevation of the Dead Sea is –485 feet. What is the difference in the elevation between Mt. Everest and the Dead Sea?

11. A scuba diver swam 96 feet beneath the surface of the lake. He then climbs up 49 feet. What is his depth now?

12. The temperature was –3° C last night. It is now –4° C. What was the change in temperature?

13. While watching a football game, Lin Chow decided to list yardage gained as positive integers and yardage lost as negative integers. After these plays, Lin recorded 14, –7, and 9. What was the net gain or loss?

14. Pythagoras was born about 582 BC. Isaac Newton was born in 1643 AD. How many years apart were they born.?

15. Sonny has $75 to spend. The purchase he wants to make requires $93. If he borrows the extra money that he needs, how much does he need to borrow?

16. Two golfers completed one round of golf. The first golfer had a score of +6 and the second golfer had a score of –3. How many more shots did the first golfer take?

17. What is the balance as a result of having a credit of $84 and a debit of $29?

18. The freezing point of water is 32° F. Tim added potassium and found out that the freezing point went down by 8° F. What was the freezing point of the water with the added potassium ?

19. The city's budget is $8,000,000. The city actually spends $12,000,000. What is the city's deficit?

20. The local movie theater reported losses of $475 each day for three days. What was the loss for the three days?

Why Doesn't Gonzo Glomgold Brush His Teeth with Gunpowder?

I Use the table to evaluate each expression. Write the letter of the exercise in the box containing the value.

E. $7x$	T. $3x + 1$	$a = 3$ $x = 2$ $n = 10$
S. $16y$	A. $6n - 4$	$b = 4$ $y = 5$ $m = 12$
A. ab	H. $\dfrac{2m}{3}$	E. $7ab$
G. nx	I. $7 + 2y$	D. $100 - 3y$
H. $20 - b$	F. $5a - 9$	M. $9n - 4m$
I. $\dfrac{m}{a}$	H. $\dfrac{ny}{25}$	R. $ax + by$

16	84	80	72	56	6	26	12	4	85	33	8	14	49	42	17	20	2	7

II Write an expression for each exercise. Write the letter of the exercise in the box containing the expression.

O. 6 times a number n

T. the sum of a number x and 15

S. a number n divided by 12

O. the product of 8 and a number x

H. 3 more than a number n

F. 3 less than a number x

O. 3 decreased by a number n

U. a number x decreased by 40

S. the product of a number n and 9

O. 40 divided by a number x

I. 6 minus a number n

F. the sum of 8 and a number x

H. 9 more than a number n

M. 15 less than a number x

T. 12 decreased by a number n

H. 15 decreased by a number x

$9n$	$n + 9$	$6n$	$3 - n$	$12 - n$	$n + 12$	$n + 3$	$6 - n$	$\dfrac{n}{12}$

$x - 15$	$8x$	$x - 40$	$x + 15$	$15 - x$	$\dfrac{x}{3}$	$\dfrac{40}{x}$	$x - 3$	$8 + x$

Why Didn't Anybody Win the Race from Russia to Sweden?

Evaluate each formula for the given values of the variables. Circle the letter of the correct value. Write this letter in the box containing the number of the exercise.

$d = rt$	① Find d if $r = 8$ and $t = 3$	K. 32	Y. 24
	② Find d if $r = 60$ and $t = 7.5$	R. 450	U. 390
$V = lwh$	③ Find V if $l = 3$, $w = 2$, and $h = 9$	E. 54	A. 62
	④ Find V if $l = 7$, $w = 4$, and $h = 3.2$	O. 89.6	H. 94.6
$A = \dfrac{bh}{2}$	⑤ Find A if $b = 12$ and $h = 5$	G. 42	P. 30
	⑥ Find A if $b = 2.4$ and $h = 38$	E. 45.6	C. 39.6
$y = mx + b$	⑦ Find y if $m = 2$, $x = 7$, and $b = 4$	A. 15	O. 18
	⑧ Find y if $m = 1.6$, $x = 9$, and $b = 3$	N. 19.2	Y. 17.4
$d = \dfrac{n(n-3)}{2}$	⑨ Find d if $n = 6$	D. 9	L. 11
	⑩ Find d if $n = 11$	K. 52	S. 44
$A = \dfrac{h(a+b)}{2}$	⑪ Find A if $h = 3$, $a = 8$, and $b = 2$	O. 18	E. 15
	⑫ Find A if $h = 4.5$, $a = 10$, and $b = 6$	L. 29	D. 36
$s = 16t^2$	⑬ Find s if $t = 3$	B. 144	N. 180
	⑭ Find s if $t = 10$	P. 1600	S. 960
$V = \dfrac{w^2 h}{3}$	⑮ Find V if $w = 5$ and $h = 6$	V. 50	N. 48
	⑯ Find V if $w = 8$ and $h = 2.7$	H. 61.4	T. 57.6

6	15	11	2	8	13	4	12	1	10	16	7	5	14	3	9

Mrs. McCauley's Algebra I

What Does an Algebra Teacher Like for Breakfast?

Write and solve an equation for each problem (let x = the unknown). Find your equation in the column at the right. Write the letter of the equation in the box at the bottom that contains the solution to the problem.

1 Wilbur is thinking of a number. The sum of the number and 30 is 255. Find Wilbur's number.

2 Orville is thinking of a number. The product of the number and 39 is 156. Find Orville's number.

3 When a mystery number is divided by 7, the quotient is 124. Find the number.

4 Snorkel's age 15 years ago was 22. How old is Snorkel today?

5 Zad bought a $39 sweater and a jacket. He spent $156 altogether. What was the cost of the jacket?

6 Lisa earns $8 an hour. How many hours must she work to earn $272?

7 The math department bought 30 calculators for $255. What was the cost of each calculator?

8 A collection of stamps is divided into groups of 15 stamps for pasting in an album. If there are 22 groups, how many stamps are in the collection?

9 After Jeeves lost 7 lb, he weighed 124 lb. How much did he weigh originally?

equations

L. $x - 30 = 255$

D. $\frac{x}{7} = 124$

O. $x + 39 = 156$

V. $7x = 124$

N. $x + 30 = 255$

A. $x - 15 = 22$

R. $39 - x = 156$

X. $\frac{x}{15} = 22$

A. $39x = 156$

N. $8x = 272$

C. $x - 7 = 124$

B. $30x = 255$

E. $\frac{15}{x} = 22$

$8.50	4	131 lb	$117	225	116 lb	37	34	868	$9.20	330

Why Was Argo Smogg So Proud When He Finished a Jigsaw Puzzle in Just 3 Weeks?

Solve each equation or problem, then cross out the letters above the solution. When you finish, write the remaining letters in the spaces at the bottom.

1. $x - 38.8 = 12.5$

2. $14.9 + n = 62.5$

3. $\frac{1}{6}b = 7.4$

4. A bank of 16 floodlights together use 4000 watts of power. How much power is used by each bulb?

5. Zola is thinking of a number. If the number is divided by 7.5, the quotient is 62. What is Zola's number?

6. The width of a photograph is 4.5 in. less than the length. If the width is 9.2 in., what is the length?

7. Argyle's weight is 0.7 of his father's weight. If Argyle weighs 119 lb, how much does his father weigh?

8. The total price for a computer and a printer was $1039. If the computer cost $750, how much did the printer cost?

9. If a rope is cut into 8 equal pieces, each piece is 3.5 ft long. How long is the rope before it is cut?

10. Between noon and midnight, the temperature dropped 18°F. If the temperature was 57°F at midnight, what was the temperature at noon?

11. The length of a model car is $\frac{1}{20}$ of the length of the actual car. If the model is 8.7 in. long, how long is the actual car? (Express your answer in feet.)

HE	ON	ST	TH	AT	EN	ER	EB	IG
$289	82°F	250 W	14.3 in.	75°F	51.3	13.7 in.	$275	14.5 ft
OX	**UP**	**IT**	**SH**	**OW**	**SA**	**ME**	**ED**	**ID**
16.2 ft	47.6	360	170 lb	465	166 lb	28 ft	44.4	290 W

SOLVING PROBLEMS WITH GRAPHS

Solve each problem by writing and graphing a system of equations that models the situation.

Situation 1. ROCKET RIDE.

The Rocket Coaster has 10 cars, some that hold 4 people and some that hold 8 people. There is room for 56 people altogether. How many 4-passenger cars are there? How many 8-passenger cars are there?
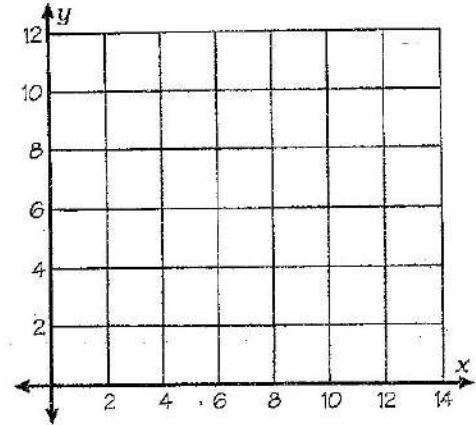
Let x = number of 4-passenger cars

Let y = number of 8-passenger cars

equation #1:_____

equation #2:_____

Solution:_____

Situation 2. FUN, FUN, FUN.

The cost of admission to Funland Park was $70 for a group of 2 adults and 5 children. The admission was $84 for another group of 4 adults and 3 children. Find the admission price for each adult and each child.
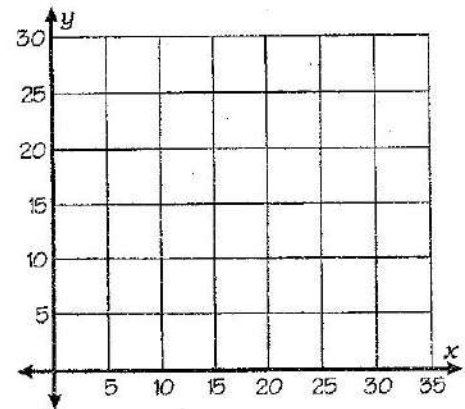
Let x = price of an adult's admission
Let y = price of a child's admission

equation #1:_____

equation #2:_____

Solution:_____

Situation 3. HOW ABOUT A KISS?

The number of calories in a chocolate kiss is 20 less than the number of calories in a caramel cluster. Three kisses plus four clusters together have 360 calories. How many calories are in each?
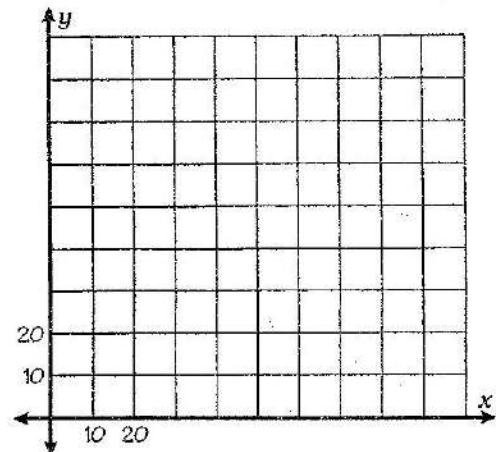
Let x = calories in a chocolate kiss
Let y = calories in a caramel cluster

equation #1:_____

equation #2:_____

Solution:_____

What Do You Call a Scary Dog That Knows What's Happening?

For each situation, complete the table, then draw two graphs and write two equations. For table cells with letters, write the letter in the corresponding box at right.

12	0	400	25	200	5	15	28	700

Sales Job. Prime Products will pay you a weekly salary of $100 plus 10% of sales. Digit Displays will pay you a weekly salary of $300 plus 5% of sales. Show how your total weekly earnings at each store is a function of your sales.
**Equations:**

Sales ($/wk)	Earnings ($/wk)	
	Prime	Digit
0	100	300
1000	E	
2000		A
3000		
4000		
5000		
6000	F	
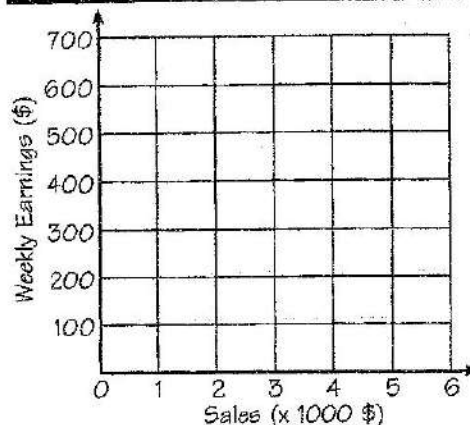
Burning Gas. A Turbo averages 10 miles per gallon, and the gas tank holds 30 gallons. A Tork averages 25 miles per gallon, and its gas tank holds 16 gallons. If both cars start with full tanks, show how the amount of gas left in the tank is a function of the number of miles driven.
Equations:

Miles Driven	Gas Left (gal)	
	Turbo	Tork
0	30	16
50		
100		A
150	O	
200		
250		
300		
350		
400		W
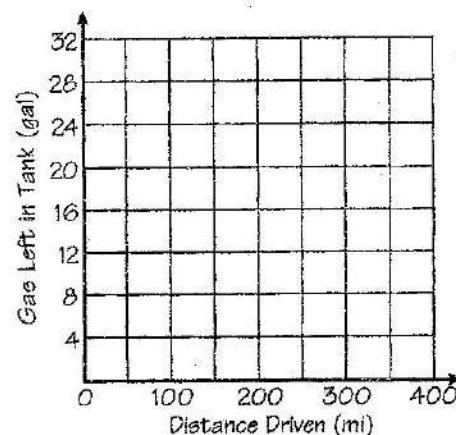
Crawlin' Critters. An oak tree is 30 ft from an elm tree. A snail started crawling from the oak to the elm at a rate of 4 ft/h. A turtle started crawling from the elm to the oak at a rate of 5 ft/h. Show how the distance of each animal from the *oak* tree is a function of time since they started crawling.
Equations:

Time (h)	Distance (ft)	
	Snail	Turtle
0	0	30
1		R
2		
3		
4		
5		W
6		
7	L	