[This worksheet is homework. Keep it with your other homework to be included in homework checks.]

L. G	asoline Problem. A local gas station charges \$2.60) per gallon if you also pay \$	4.00 for a car wash.	
(a).	Let x be the number of gallons of gas you buy.	←	The variable is defined in words	
	Write an expression for the total number of dollars	you pay for gas and a car wa	ash.	
(b).	How much, total, would you pay if you bought: i. 12 gallons;	ii. 20 gallons?		
(c).	Suppose that your total bill was \$42.18. How many	gallons of gas did you get?		
2. D	onuts Problem. Drenchin Donuts sells donuts for	\$0.85 each, plus \$0.15 for the	e box in which they come.	
(a).	Let x be $_$		— Define the variable in words	
	Then write an expression for the number of dollars you pay for x donuts.			
(b).	How much will you pay for: i. 12 donuts;	ii. 100 donuts?		
	iii. What assumption must you make about the box	ς in order for the answer to ((ii) to be reasonable?	
(c).	Write an equation stating that the number of dollar how many donuts you get for \$13.75.	s you pay is \$13.75. Then so	olve the equation to find out	

	elivery Problem. Bill Dupp's Lumber Yard charges \$.50 for each cubic for to deliver the sand. So the total number of dollars you pay is 0.50 times the	
(a).	Let x be the number of cubic feet.	\longleftarrow The variable is defined in words.
	Then write an expression for the number of dollars you pay for x ft ³ of sand	l, delivered.
(b).	How much would you pay to get 258 ft ³ delivered?	
(c).	Write an equation stating that you pay \$17.50 to get x ft ³ of sand delivered.	Then solve the equation for x .
(d).	How much sand could you get, delivered, for \$100?	
4. P l call.	lumbers' Wages Problem. Drane and Route Plumbing Co. charges \$42 pe	er hour, plus \$35 for the service
(a).	Let x be $\underline{\hspace{1cm}}$	\longleftarrow Define the variable in words.
	Then write an expression for the number of dollars you must pay if they wo	$\mathbf{r}\mathbf{k}$ for x hours.
` ,	How much would you pay for: i. 3 hours;	
	ii. $4\frac{1}{2}$ hours?	
(c).	Write an equation stating that the amount you pay is \$140. Then solve the they worked.	e equation to find out how long
(d).	How long did they work if the bill is \$56?	

adde	ed for each mile driven.			
(a).	. Let x be		\longleftarrow Define the variable in words.	
	Then write an expression for the number of dollars the meter reads after x mi.			
(b).	. How much would you pay to ride:			
	i. 5 mi;	ii. 13 mi?		
(c).	. Write an equation stating that you paid \$18.40. The	en solve the equation to fi	and out how far you rode.	
(d).	. How far could you ride for \$33.20?			
each	Dump Truck Problem. Doug Upp must shovel a particle scoop, he decreases the size of the pile by $\frac{1}{6}$ ft ³ .	oile containing 50 ft^3 of sa		
(a). Let x be the number of scoops he has shoveled. \leftarrow Define the variable. Then write an expression for the number of cubic feet of sand left in the pile after x scoops.			\leftarrow Define the variable in words. after x scoops.	
(b).	. How much sand is left after: i. 12 scoops;	ii. 100 scoops?		
(c).	. Doug takes a rest when $20~{\rm ft^3}$ of sand remain. Write equation to find out how many scoops Doug has sho		$20~{\rm ft}^3$ remain. Then solve the	

5. Taxi Fare Problem. When you flag a taxi, you get an initial charge of \$3.25. As the taxi travels, \$1.80 is

Line	ear Equations Applications	Page 4			
	asoline Consumption Problem. Suppose that th $\frac{1}{20}$ of a gallon per mile.	e gas tank of a car holds 12 gallons, and that the car			
(a).	Let x be the number of miles the car has gone since	the tank was filled. \leftarrow The variable is defined in words.			
	Then write an expression for the number of gallons left after x miles.				
(b).	How many gallons are left after:				
	i. 100 mi;	ii. 170 mi?			
(c).	Write an equation stating that 5 gallons are left. Th gallons remain.	en solve it to find out how far the car has gone when 5			
(d).	How far has the car gone when it runs out of gas?				
const		es conducted during World War II, a working person e in the Celsius temperature. Suppose that a person			
(a).	How many calories would the person consume at:				
	i. 1°C;	ii. 5°C;			
(b).	Let T be the temperature in $\circ C$. Write an expression $T^{\circ}C$, where T is a variable?	on for the number of calories consumed at T° C . iii.			
(c).	Evaluate the expression you wrote in part (b) if:				
	i. T is 21;	ii. T is -10 .			
(d).	Write an equation stating that the consumption is 2-	400 cal. Then solve it to find the temperature.			

(e). At what temperature would the person consume 4200 cal?