GSE Algebra I			
Writing Linear Equations			

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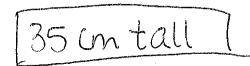
Write a linear equation in FUNCTION NOTATION for each scenario.	. Remember to define your variables
Remember: Your slope will be changing with your variables and you	ur intercept will only occur once.

- 1. Lin is tracking the progress of her plant's growth. Today the plant is 5 cm high. The plant grows 1.5 cm per day.
 - a. Write a linear model that represents the height of the plant after d days.

$$H(d) = 15d + 5$$

b. What will the height of the plant be after 20 days?

$$H(20) = 1.5(20) + 5$$



- 2. A salesperson receives a base salary of \$35,000 and a commission of \$5 per sale made.
 - a. Write a linear model that shows the salesperson's total income based on n total sales.

$$I(n) = 5n + 35000$$

If the salesperson makes 350 sales, how much will the salesperson make that year?

$$I(350) = 5(350) + 35000$$

| \$36,750

If the salesperson wants to make \$40,000 in a year, how many sales will she have to make?
$$40000 = 5h + 35000$$

$$-35000 = 5h + 35000$$

$$5000 = 5h + 35000$$

- Mr. Thompson is on a diet. He currently weighs 260 pounds. He loses 4 pounds per month.
 - a. Write a linear model that represents Mr. Thompson's weight after m months.

$$W(m) = -4m + 260$$

b. How much will Mr. Thompson weigh after 6 months?

$$W(6) = -4(6) + 260$$

c. After how many months will Mr. Thompson reach his goal weight of 220 pounds?

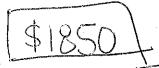
$$-220 = -4m + 260$$

 $-260 = -260$

$$\frac{-40}{-4} = \frac{-4m}{-4}$$

- Paul opens a savings account with \$350. He saves \$150 per month. Assume that he does not withdraw (take out) money or deposit (put in) any more money.
 - Write a linear model that represents the total amount of money Paul deposits into his account after m Nm1= 150m+350
 - b. How much money will Paul save in 10 months?

$$D(10) = 150(10) + 350$$



After how many months will Paul have more than \$2,000?

2000 4 150m + 350

Problems from www.mathworksheetsgo.com/

	5.	rne population of Bay Village is 35,000 today. Every year the population of Bay Village increases by 750 people.
		a. Write a linear model that represents the population of Bay Village x years from today.
ň		P(x) = 750x + 35000
		b. How many people will live in Bay Village in 8 years?
		P(8) = 750(8) + 35000 41,000 people
	٠	c. In approximately how many years will the population of Bay Village exceed 50,000 people? $\times 20 \text{ years}$
	6.	35000 -3500 -3500 -350 -350 -350 -350 -3
		account.
		a. Write a linear model that shows how much money will be in the account after x months.
		M(x) = -1500x + 25000
		b. How much money will Conner have in his account after 8 months?
		M(8) = -1500(8) + 25000 $($13,000)$
		c. After how many months will Conner have \$7000 in his account? $7000 = -1500 \times +25000 \qquad \qquad -18000 = -1500 \times = 12$
		-25000 -25000 -1500 -1500 months
	7.	A cell phone plan costs \$30 per month for unlimited calling plus \$0.15 per text message.
e 1 - 9., 1		Write a linear model that represents the monthly cost of this cell phone plan if the user sends t texts. $C(t) = 515t + 30$
		b. If you send 200 text messages, how much would you pay according to this cell-phone-plan?
		C(200) = .15(200) + 30 [\$60.00]
		c. If you spent \$48.75, how many text messages did you send? $48.75 = .15 t + 30$ $18.75 = .15t$ $1 + 125 +$
	_	-30 -30 -35 -15 -
	8.	An empty truck weighs 40,000 pounds. The fuel that it transports weighs 12 pounds per gallon. a. Write a linear model that represents the weight of a truck carry g gallons of fuel.
		W(a) = 129 + 40000
		b. If the truck is carrying 152 gallons of fuel, how much does it weigh?
		W(152) = 12(152)+40000 [41,824 165]
		c. How many gallons of gas can the truck carry and still be under the legal limit of 80,000 pounds? $40000 \ge 120 + 40000 = 40000 \ge 120 = 3333 = 30000$
		-40000 - 129 + 40000 - 12 12 12 + 9 - 3533.5 99110751
		d. At \$3.40 per gallon, how much would that fuel sell for at the QuikTrip on Lower Roswell?
	1.1.	33333 G 1 & 3.40 (d 1) 222 221
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