

Unit 3: LINEAR FUNCTIONS

It's functions writing time.

- Tamar pays \$75 dollars to go to Little Man's Gym each month. Each time he uses the gym \$3 is deducted.
- a. Write a linear function
- b. Find the value 10 visits.

and again....

- Ben-Jam-In loves to watch movies. On his Netflix account he pays \$62 dollars up front. Each movie he watches he pays 6 dollars.
- a. Write a linear function
- b. How much money does he have after 5 movies?

and again....

- Tony the tiger loves to sell fruit loops. He gets paid \$40 up front and \$3.50 for every box of fruit loops he sells.
- a. Write a linear function
- b. How much money does he have after 6 boxes?

Last one.

- Mr. Reincke has \$435 dollars in his cross country account. Each time a runner finishes the race in the top ten, he pays them \$10.
- a. Write a linear function
- b. How much money does he have after 12 top ten finishers?

Just kidding, for real last one.

- Every student in Ms. Cangialosi's class gets 53 points for participation. Every time a student falls a sleep she takes away 4 points.
- a. Write a linear function
- b. Find the value after a student sleeps 8 times.

Caring is Sharing

- Julie went on a vacation to Las Vegas. She bought 64 fake casinos chips. She comes back and wants to give them to four friends. Write an equation that would show how many chips each friend will receive. Then solve the equation.

Caring is Sharing

- Susan went and bought y number of key chains. She has 6 friends that she wants to give them equally to. Write an equation that would show how many key chains each friend will receive.

Caring is Sharing

- Sal went and found 56 rare but equally fun roots, yes roots. He wants to give them to his roots to y friends. Write an equation that would show how many roots each friend will receive. Then solve the equation for $y=4$.

Caring is Sharing

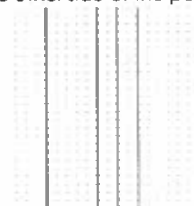
- Chi has 44 glass jars of gummy bears. Chi wants to give them to his x friends. Write an equation that represents the scenario. Evaluate the equation when $x = 4$.

What's the big difference?

- Graphs of $f(x)=x$ and $g(x)=1/3x$
- Graphs of $f(x)=-1/2x+2$ and $g(x)=3/2x-2$
- Graphs of $f(x)=1/4x-4$ and $g(x)=-x-4$

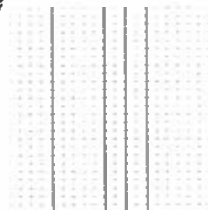
How fast can you go?

- A swimmer swims to the other end of the pool. The pool is 25 yards long. The swimmer swims at a pace of 3 yards per second. Write and graph the equation to represent the swimmers distance to the other end of the pool with relation to time. When will the swimmer reach the other side of the pool?



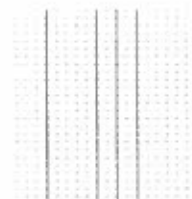
How fast can you go?

- A runner is racing around the track. The track is 400 yards long. The runner runs at a pace of 25 yards per second. Write and graph the equation to represent the runner's distance to get around the track with relation to time. When will the runner get all the way around the track?



How fast can you go?

- A runner is racing to the other end of the field. The field is 100 yards long. The runner runs at a pace of 6 yards per second. Write and graph the equation to represent the runner's distance to the other end of the field with relation to time. When will the runner reach the other side of the field?



- Given the equations $3x+5y=60$. Find the intercepts and graph.

- Given the equations $6x+12y=72$. Find the intercepts and graph.

- Given the equations $10x-2y=50$. Find the intercepts and graph.

- Given the equations $4x+8y=32$. Find the intercepts and graph.

Basketball

- Using the formula $2x+3y=30$, with x being the number of two points shots made and y be the number of three pointers made. What does the x -intercept mean and what does the y -intercept mean?

Check sum numbers

- $f(t)=(40 \times .1)t$ when t is 6

Check sum numbers

- $f(t)=30 - (30 \times .1)t$ when t is 7 , 8

Check sum numbers

- $f(t)=60 + (60 \times .1)t$ when t is 3 , 5

Check sum numbers

- $f(t)=40 + (40 \times .2)t$ when t is 5

Check sum numbers

- $f(t)=40 - (50 \times .3)t$ when t is 8, 9

Check sum numbers

- $f(t) = 40 + (60 \times .4)t$ when t is 3

Temperature

- How do you tell when a table is linear?
- $F = (9/5)C + 32$
- Pick some points and make a table.
- What can you tell me about this equation/table?
- Graph the equation.
- Can you solve for C ?
- Is that linear?

You go to a mechanic to get your car fixed. The mechanic charges you \$50 for the initial visit and \$35.50 for every hour after that. Write an equation that represents the situation and solve for 6 hours.

Your cell-phone carrier charges you a \$40 fee for 100 minutes. Every 10 minutes after that is \$5 dollars. Write an equation that represent the given situation and solve for 120 minutes.

The mechanic charges a flat fee of \$35 and a fee of \$60.25 every hour after that. Write an equation for the above situation. Then figure out how much it will cost after 9 hours of labor.

A pay phone charges you 10 cents for every minute that you talk on the phone. It also charges you \$1 for you to dial the number. Write a equation that represents the situation and solve for a 15 minutes phone call.

Bring back the functions

- Sarah writes 325 letters a month. Let $f(x)$ represent the amount of letters she writes. Write an equation that represents the scenario.

Function, function

- La-a throws out 32 dresses. Let $d(x)$ represent the amount of dresses she eliminates. Write an equation that represents the scenario.

Function, function, functions

- Trey tackles 53 people in a season. Let $t(x)$ represent the amount of tackles. Write an equation that represents the scenario.

Let's keep it going

- Write a scenario for the following problem. Sarah can write a letter in five minutes. It takes her 10 minutes to get set up.

Let's keep it going

- In order for the Titans kicker to kick field goals that are good. He must be paid \$625,000. Every field goal after that he gets paid \$1500. Write a equation for the situation.

Let's put on together.

- Write a scenario for the following problem. Sarah can write a letter in five minutes. It takes her 10 minutes to get set up, represented by $w(x)$.
- Sarah writes 325 letters a month. Let $f(x)$ represent the amount of letters she writes.

Variable Check

- What does dependent variable mean?
- What does independent variable mean?
- Who is dependent, the bus driver or you?
- Who is dependent, the mechanic or the prize?
- Who is dependent, the cow or the milk?
- Who is dependent, a bat or the night?

Let's all go to the mall, today!

You go to the mall and every hour you are there you spend \$75. Driving to the mall you spend \$25 in gas. Using the equation $f(x)=75x+25$, what do the variables represent and what is the dependent variable?

Jelly Belly

- In a container of Jelly Belly Jelly Beans there are 25 jelly beans. There are x orange ones and y yellow ones. Those are the only two colors. Write and equations for the situation. What does the x -intercept mean? What does the y -intercept mean?

The Tornado

- The "Tornado" has \$45 dollars in her purse. She only has either \$5 or \$1 bills. Write an equation for the situation. What would the x and y intercepts be and what would they mean?

Goalie Saves

- Sean is the goalie of the soccer team. He has had 98 shots on him this year. The shots either were saved by him or missed. Write an equation and describe the intercepts.

Recursive

- 1, -3, 9, -27, 81, ...

Recursive

- 1,-4,16,-64,256,...

Recursive

- 1,-6,36,-216,1296,...

Recursive

- 1,-3,9,-27,81,...