Captain Martinez was about to set foot on Mars. His footsteps would be the first for humankind. It was a long trip through space and even longer trip to get the space program to the level where a manned landing on another planet would become reality.

Problem Level: Basic

1. Use the list to find the average length in days of the Mars missions.

- Viking 1 (1976) – 335 days
- Viking 2 (1976) – 360 days
- Mars Reconnaissance Orbiter (2006) – 210 days
- Phoenix Lander (2008) – 295 days
- Curiosity Lander (2012) – 253 days

2. If the first human piloted mission to Mars took from January 1st to July 31st, find the difference between the average found in question 1 and the days of this mission.

FACT: A hundred pound man would weigh 38 pounds on Mars.

3. Captain Martinez weighs 185 pounds on Earth. His space suit and gear weigh 180 pounds on Earth. About how much is the total weigh of Captain Martinez and his suit on Mars?

4. It is projected that humans will land on Mars in 2023. How long has it been since Viking 1 first traveled to Mars?
**Math Plane and Simple:** Tips on Dining Out

Plane and Simple have decided to treat themselves to a dinner at an upscale restaurant. Plane’s meal cost $22 and Simple’s meal has a price of $26. They have appetizers before the meal that cost $8. Their drinks cost $4 each. The service is outstanding. They want to leave a 20% tip. How much should they tip their server?

Any trip into space will require Algebra skills. Use yours to solve these problems.

Multiply

\[(x - 14)(x + 3)\]  \[= (x + 11)(x - 15)\]

\[(x - 13)(x - 7)\]  \[= (x - 17)(x - 4)\]
Supplies without Surprize

Slap Happy has just received his first shipment of supplies to start up his business. His store room and freezer are stocked full. He has a case of fresh tomatoes, lettuce, jars of relish, cases of ketchup and mustard. The most important ingredient of all is the ground meat. Slap Happy has 220 pounds of top sirloin burger. Slap Happy makes all his burgers in quarter pound patties. The total cost of his order is $730.40. The meat order is 75% of the total cost.

Directions: Determine Bob’s cost for a single quarter pound patty of ground beef. Round your answer to the nearest penny.

Winter Worries

Plane and Simple are going to insulate the attic floor of their house. They need to know how much insulation they will need and how much it will cost. Use the diagram to calculate the area of the attic floor. Use the information provided to find the area and cost of the insulation.

Insulation 1m x 5m ft $15.00 per roll.

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First Customers
Slap Happy’s Burger Standard is open for business. His first customers are his niece Ruth and her friend Martha. They order the Seven Seas Special for $3.89. For that price, they get a large drink, fries, and a burger. Sold separately the drink costs $1.49, the fries are $1.69 and the burger is $1.89. How much did they save by ordering the special?

The Tattered Man
Slap Happy’s second customer of the day was an old man in tattered clothes. He told Chef Bob it pays to advertise. He suggested making copies of the menu and passing them out at the Mitra Industrial Complex. The local copy shop charges $0.03 a copy. How many copies can Slap Happy make for $25?

Fliers and First Steps
Slap Happy has hired his niece Ruth and her friend Martha to pass out fliers advertising the Burger Standard. Ruth and Martha will start passing out fliers at the Mitra Corporation. There are 15 buildings in the complex with an average of 35 offices in each building. If it takes about 5 minutes to walk to each building and 15 seconds to pass out each flier. About how long will it take to deliver a flier to each office?
When planning to launch a rocket, one needs to be a safe distance from the blast off point.

If a rocket with a height of 4 feet has a minimum safe distance of 45 feet. A rocket a 150 feet tall will have a minimum safe distance of how many feet?

Famous Gauges in History

The Throckmorton Impulsatron required a safe operating reading of

\[ x + 6 \leq 10 \quad \text{and} \quad x + 2 \geq -1 \]

Mark the gauge to show the safe operating range.

Catching the Bus MATH Plane and Simple

Simple took the bus to work. Unfortunately, he forgot his lunch at home. Plane grabs the lunch and drives after the bus. The bus has a 15 minute head start and is traveling at an average rate of 40 mph. Plane is traveling at an average rate of 60 mph. How long will it take Plane to catch up to the bus? Directions: Determine how much time it will take Plane reach the bus.
CONSUMER ALERT

Mark Shuckleman, the owner Yeens Auto, is having a sale or so he says. All his second hand cars are discounted 20% off of their sticker price. A week before the sale, Shuckleman increased the price of his cars 25%. A white four-door sedan had a price of $1500 a month before the sale. What is the new price of the car during his sale? (You must find the price it was marked up to a week before the sale. Then you must find its sale price.)

The Shaded Triangle

Find the area of the shaded triangle.

area of a triangle.

\[
\frac{bh}{2} = A
\]
In the land of Bathtub, small villages inhabited by little creatures known as Scumbeanies can be found. The Scumbeanies are nomadic hunter gatherers. Their small villages exist only as long as the essentials for life abound. Essentials such as mildew, bath oil, and most importantly, soap scum are the mainstays of Scumbeanie life.

Soap scum salvage squads need to gather the fibers of the scrub brush to aid in the gathering of the soap scum.

Zud and Suds have found 3 fibers

Find the TOTAL length of the fibers in mm.

10 mm = 1cm

A = 50 mm  B = 2 cm  C = 4.5 cm

Fiber one: A+B+C=______________

Fiber two: 2(A+C)=______________

Fiber three: (2C + 1 cm) ÷ 2=__________

Total fiber length__________________

You will need to substitute in the values then do the math operations. Remember to convert to the same units.
Famous Gauges in History

The Ludwig Altronic Nulifier would malfunction if operated below the correct amp level or above the amp limit set by these inequalities.

\[-3x + 6 \geq -12 \text{ or } x - 2 \leq -14\]

Solve the inequalities and mark the gauge to show the malfunctioning limits.

Astro-girl has located two space bacteria. She must inoculate them to prevent their spread. She will need to use the \( y = mx + b \) equations for lines to direct the inoculations.

Directions: Plot two points on each line. Find the slope and then create the \( y = mx + b \) equations.

\[
\frac{y_2 - y_1}{x_2 - x_1} = m
\]

\[(y - y_1) = m(x - x_1)\]