

Math 310 - Dr. Miller - HW #2: Word Problem Scenarios

1. Give the following information for each problem below: (I) the number sentence it represents, written in the most meaningful arrangement, (II) the scenario it requires for its operation, and (III) whether it requires objects or measurements.
 - (a) In an election, 5 people are running for president and 3 people are running for vice president. How many different pairs of candidates can be elected to the two offices?
 - (b) Kathy goes on vacation on the 21st, and it's the 12th now. How long until she goes on vacation?
 - (c) Mrs. Green wants to split her $\frac{3}{4}$ of a bushel of tomatoes evenly into 5 packages. How many tomatoes go into each package?
 - (d) The automatic car wash can process one car every 5 minutes. How many cars can they process in 30 minutes?
 - (e) Concert tickets cost \$8 each. How much would 3 tickets cost?
 - (f) A "flat" of eggs holds 6 rows of 8. How many eggs are in a flat?
 - (g) An index card is 3 in. by 5 in. How much space does it cover?
 - (h) The 120-member senior class is taking a trip to Niagara Falls. How many buses must they charter that hold 30 people apiece?
 - (i) Jeff is saving to buy Carrie an anniversary ring that costs \$500. He has \$350 saved up already. How much more does he need?
 - (j) Each person in the United States creates about $\frac{1}{4}$ of a ton of garbage per month. How much garbage does a person create in 12 months?
 - (k) It takes $\frac{1}{2}$ a bushel of tomatoes to make one batch of juice. How many batches can be made from 18 bushels of tomatoes?
 - (l) Pam had to set her watch forward 6 hours to go to Hawaii, then back 3 when stopping in San Francisco. How many hours ahead of home is her watch right now?
 - (m) After launch, the rocket takes $\frac{5}{8}$ of a year to reach the asteroid belt, and then another $\frac{1}{3}$ of a year to reach orbit around Jupiter. How long does it take to get from launch to Jupiter?
 - (n) Ellen's worked at SRU for 18 years and David's been here 13. How much longer has Ellen worked here than David?
 - (o) A jet travels 180 miles in 4 hours. What is its average speed?
 - (p) The water level rose $\frac{1}{4}$ of a meter last week and another $\frac{3}{5}$ of a meter this week. How much higher is it now than it started?
2. Make up an *original* word problem that requires each of the following computations, scenarios, and settings ("original" means you can't just change the numbers in our in-class examples):
 - (a) $\frac{15}{1000} \div 3$, partitioning, measurements
 - (b) $6 + 10$, combine, measurements
 - (c) $9 - 7$, missing addend, objects
 - (d) 6×4 , Cartesian product, objects
 - (e) $20 \div 5$, partitioning, measurements
 - (f) $\frac{7}{10} - \frac{1}{2}$, take away, measurements
 - (g) 9×3 , array, objects
 - (h) $16 - 10$, comparison, measurements
 - (i) $16 \div 2$, repeated subtraction, objects
 - (j) $\frac{2}{3} \times 5$, repeated addition, measurements
 - (k) $18 \div 9$, repeated subtraction, measurements

Math 310 - Dr. Miller - Solutions to HW #2

1.
 - (a) $5 \times 3 = 15$, Cartesian product, objects
 - (b) $21 - 12 = 9$, missing addend, measurements (times/date works better that way)
 - (c) $\frac{3}{4} \div 5 = \frac{3}{20}$, partitioning, measurements (bushels) but objects are ok too
 - (d) $30 \div 5 = 6$, repeated subtraction, measurements (time)
 - (e) $8 \times 3 = 24$, repeated addition, objects or measurements (small amounts of money)
 - (f) $6 \times 8 = 48$, array, objects
 - (g) $3 \times 5 = 15$, area, measurements
 - (h) $120 \div 30 = 4$, repeated subtraction, objects
 - (i) $500 - 350 = 150$, missing addend, measurements (large amounts of money)
 - (j) $\frac{1}{4} \times 12 = 3$, repeated addition, measurements
 - (k) $18 \div \frac{1}{2} = 36$, repeated subtraction, measurements
 - (l) $6 - 3 = 3$, take away, measurements
 - (m) $\frac{5}{8} + \frac{1}{3} = \frac{23}{24}$, combine, measurements
 - (n) $18 - 13 = 5$, comparison, measurements (calendar/time)
 - (o) $180 \div 4 = 45$, partitioning, measurements
 - (p) $\frac{1}{4} + \frac{3}{5} = \frac{17}{20}$, combine, measurements
2.
 - (a) My flask contains $\frac{15}{1000}$ of a gram of Chemical A. If I pour it all out equally into 3 test-tubes, how much should go into each test-tube?
 - (b) Chef Tilda dumped 6 pounds of sugar into her giant mixer, then poured in another 10 pounds of fine cake flour. How many pounds of dry ingredients is the mixer mixing?
 - (c) Andy's favorite shirt is supposed to have nine buttons on it, but after he got home from playing, it only had 7. How many buttons are missing?
 - (d) I'm decorating cupcakes for my third graders. If I pick 1 of six colors of frosting and 1 of 4 colors of sprinkles, how many different looking cupcakes can I take to school?
 - (e) The winner in a watermelon-eating contest ate 5 whole melons in 20 minutes. How fast was he eating each melon?
 - (f) The shopping mall used $\frac{1}{2}$ a ton of salt on their parking lots during the recent storm. If the salt truck started with $\frac{7}{10}$ of a ton in it, how much was still unused after they were done?
 - (g) The band's woodwind section marched in 3 rows of nine people each. How many woodwind players are there?
 - (h) Jackie has 16 inches of Bubble Tape, and Kyle has 10. How much longer is Jackie's Bubble Tape?
 - (i) Sixteen kids want to compete in the three-legged race. How many teams of two will that make?
 - (j) The rickety hay wagon can only be filled with $\frac{2}{3}$ of a ton of hay each trip. If the wagon made 5 trips, how many tons did that amount to?
 - (k) I have an 18-foot rope to cut into 9-foot jumpropes. How many can I make?