1. A package weighs a certain whole number of pounds. To ship this package by express, it costs $1.65 for the first five pounds and 12¢ for each additional pound. The total shipping cost was $3.45. How many pounds did the package weigh?
2. I am growing a pumpkin for Halloween. Right now it weighs 25 pounds. Each week it grows by 20% larger than the week before. How many pounds will it be after growing for 3 weeks?
3. A grocery store sells three different-sized cans of orange juice. A 6-oz can costs 55 cents. A 16-oz can costs $1.15. A 32-oz can costs $2.79. Which is the best buy?
4. Anne spent 2/3 of her money. She then lost 2/3 of the remainder and then had $4 left. How much money did Anne originally have?
5. Mr. Zipher sells fresh walnuts at his farm stand and charges by the pound. Stella fills a small bag and Mr. Zipher tells her it weighs $\frac{3}{16}$ lb and asks for 47 cents. She decides she has just enough for $\frac{1}{2}$ lb. of walnuts. How much is $\frac{1}{2}$ lb. of walnuts to the nearest five cents?
6. During a recent Cascade Ridge Walkathon Bob ran 50% more laps than Ram, and Ram ran 25% more laps than John. John ran 16 laps. How many laps did Bob run?
7. X and Y are two different numbers selected from the first 50 positive whole numbers from 1 to 50 inclusive. What is the largest value that $\frac{X+Y}{X-Y}$ can have?
8. Jack can paint a room in 3 hours and Stan can paint the same room in 2 hours. At these rates, how long will it take Jack and Stan to paint the same room together?

**BONUS PROBLEMS**

1. What is 0.001% of 2004?
2. On a number line, what fraction is exactly halfway between $\frac{3}{4}$ + $\frac{1}{3}$ and $\frac{3}{8}+\frac{5}{6}$ ?
3. The areas of the sectors of each of the three circles add to one. The decimal equivalent of the sum of C + I + R is closest to

 a. 0.8 b. 0.81 c. 0.83 d. 0.835 e. 0.85

1. There is a gallon of water. A person takes 10 sips. Each sip follows a pattern. First, they drink 1/2 gallon, then 1/3 of what's left, then 1/4 of what's left, then 1/5 of what's left. After 10 sips, how much of the original amount is left?

Another person starts with a gallon and drinks 1/11 of it, then 1/10 of what's left, then 1/9 of what's left and so on, for 10 sips. How much is left?

**Solutions**

*Note: There are many acceptable strategies to solving each problem. This sheet shows just one strategy.*

1. Additional cost beyond first five pounds = $3.45 - $1.65

Additional cost beyond first five pounds = $1.80

Additional pounds = $1.80 ÷ ($0.12 per pound)

Additional pounds = 15 pounds

Total weight = 5 pounds + 15 additional pounds

**Answer: 20 pounds**

1. Right now, pumpkin weighs 25 pounds.

After first week, 25 + 20% = 25 + 5 = 30 pounds

After second week, 30 + 20% = 30 + 6 = 36 pounds

After third week, 36 + 20% = 36 + 7.2 = 43.2 pounds

**Answer: 43.2 pounds**

1. 6-oz can: price per ounce = $0.55 ÷ 6oz = $0.092 per ounce

16-oz can: price per ounce = $1.15 ÷ 16oz = $0.072 per ounce

32-oz can: price per ounce = $2.79 ÷ 32oz = $0.087 per ounce

**Answer: The 16-oz can is the best deal.**

1. Working backwards …

She ended with $4, after losing 2/3 of her money.

Therefore, she had $12 before she lost her money.

Therefore, she had $12 after spending 2/3 of her money.

Therefore, she started with $36.

**Answer: $36**

1. 3/16 lb walnuts costs 47 cents.

Therefore, walnuts per pound cost $0.47 ÷ $\frac{3}{16}$ = $2.507 per pound

Therefore, $\frac{1}{2}$ lb walnuts costs $2.507 $×$ $\frac{1}{2}$ lb = $1.253

**Answer: $1.25**

1. John ran 16 laps.

Ram ran 25% more than John, so Ram ran 16 + 25% = 16 + 4 = 20 laps

Bob ran 50% more than Ram, so Bob ran 20 + 50% = 20 + 10 = 30 laps

**Answer: 30 laps**

**Solutions (cont.)**

1. For largest fraction, make the numerator as high as possible, and make the denominator as low as possible.

So X=50 and Y=49

So fraction becomes $\frac{X+Y}{X-Y}$ = $\frac{50+49}{50-49}$ = $\frac{99}{1}$ = 99

**Answer: 99**

1. Figure out how much of the room each boy can paint in 1 hour.

Jack can paint 1/3 of the room in an hour.

Stan can paint 1/2 of the room in an hour.

Together, then can paint $\frac{1}{2}$ + $\frac{1}{3}$ room in an hour.

 $\frac{1}{2}$ + $\frac{1}{3}$ = $\frac{3}{6}$ + $\frac{2}{6}$ = $\frac{5}{6}$ room per hour, working together.

To paint the whole room, it will take 1$÷\frac{5}{6}$ = 1$\frac{1}{5}$ hours = 1 hour and 12 minutes

**Answer: 1 hour and 12 minutes**

1. 0.001% of 2004 = 2004 x .00001 = 0.02004

**Answer:** **0.02004 or 0.020 (rounded off)**

1. To add fractions, you must first convert them to have the same denominator. We’ll choose 24 as our common denominator, since it is the least common multiple of the original denominators: 4, 3, 8, and 6.

$\frac{3}{4}$ + $\frac{1}{3}$ = $\frac{18}{24}$ + $\frac{8}{24}$ = $\frac{26}{24}$

$\frac{3}{8}$ + $\frac{5}{6}$ = $\frac{9}{24}$ + $\frac{20}{24}$ = $\frac{29}{24}$

So, now we’re left with trying to find the number that is halfway between $\frac{26}{24}$ and $\frac{29}{24}$. The number exactly halfway between 26 and 29 is 27$\frac{1}{2}$. We can’t have a fraction in the numerator, so we must convert both fractions again so that the denominator is 48 instead of 24:

$\frac{26}{24}$ = $\frac{52}{48} $

$\frac{29}{24}$ = $\frac{58}{48}$

Now, we have to find the number that is halfway between $\frac{52}{48} $and $\frac{58}{48}$. This is doable, and the answer is $\frac{55}{48}$.

**Answer:** $\frac{55}{48}$ **or 1**$\frac{7}{48}$

1. A + D + B + E = 6/9, so C = 1/3. F + G + J + K + H = 5/6, so I = 1/6. P + Q + S = 27/40, so R = 13/40. 1/3 + 1/6 + 13/40 = 99/120 = 0.825 which rounds to 0.83.

**Answer: C**

1. In the first example:
1st sip: take ½, leave ½
2nd sip: take (1/3)\*(1/2), leave (2/3)\*(1/2) = 1/3
3rd sip: take (1/4)\*(1/3), leave (3/4)\*(1/3) = ¼
The pattern continues, so after the 10th sip, 1/11 gallon will be left.

In the second example:
1st sip: take 1/11, leave 10/11
2nd sip: take (1/10)\*(10/11) , leave (9/10)\*(10/11) = 9/11
3rd sip: take (1/9)\*(9/11), leave (8/9)\*(9/11) = 8/11
Again the pattern continues, so after the 10th sip, 1/11 gallon will be left.

**Answer: 1/11 gallon**