

March 9, 2015 ^{1st}
Starter _{2nd}

Arrange the digits from 1 to 9 to make a 9-digit number ABCDEFGHI which satisfies the following conditions:

- 1) AB is divisible by 2;
- 2) ABC is divisible by 3;
- 3) ABCD is divisible by 4;
- 4) ABCDE is divisible by 5;
- 5) ABCDEF is divisible by 6;
- 6) ABCDEFG is divisible by 7;
- 7) ABCDEFGH is divisible by 8;
- 8) ABCDEFGHI is divisible by 9.

There is only one solution.



3/9 Sales Tax, Discount, and Mark-Up

Original price of a telescope: \$219.50

Tax: 7.25%

Find 7.25% of \$219.50 then
add it to the original price.

$$\begin{aligned} & 7.25\% \text{ of } \$219.50 \\ & (0.0725) \cdot (219.50) \\ & = \$15.91 \text{ in sales tax} \end{aligned}$$

$$0.0725 \times 219.5 = 15.91375$$

$$\begin{array}{r} 219.50 \\ + 15.91 \\ \hline \boxed{\$ 235.41} \end{array}$$



Original price of a truck: \$44,000.00

Tax: 7.375%

$$\begin{aligned} & 7.375\% \text{ of } 44000 \\ & (0.07375)(44000) \\ & = \$ 3245 \text{ sales tax} \end{aligned}$$

$$\begin{array}{r} \$44000 \\ + 3245 \\ \hline \$ 47,245 \end{array}$$



Find 7.375% of \$44,000 then add it to the original price.

Find the sale price of the bike if:

Original price of a bicycle: \$500.00

Discount: 40%

Find 40% of 500 then subtract it from the original price.



$$\begin{aligned} & \text{40\% of 500} \\ & \underbrace{(.4)(500)} \\ & = \$200 \text{ off} \end{aligned}$$

$$\begin{array}{r} \$500.00 \\ - 200.00 \\ \hline \$300.00 \end{array}$$

Original price of a camera: \$149.95

Discount: 15%

Find 15% of 149.95 then subtract it from the original price.

$$\begin{aligned} & \underline{15\% \text{ of } 149.95} \\ & (0.15)(149.95) \\ & = \$22.49 \end{aligned}$$

$$0.15 \times 149.95 = 22.4925$$

$$\begin{array}{r} \$149.95 \\ - 22.49 \\ \hline \$127.46 \end{array}$$



Cost of a hat: \$8.99

Markup: 25%

Find 25% of 8.99 then add it to the original price.

$$\begin{aligned} & \underline{25\% \text{ of } 8.99} \\ & (0.25)(8.99) \\ & = \$2.25 \end{aligned}$$

$$0.25 \times 8.99 = 2.2475$$

$$\begin{array}{r} \$ 8.99 \\ + 2.25 \\ \hline \$ 11.24 \end{array}$$



Original price of a shirt: \$12.50

Discount: 25%

Tax: 6.5%



$$\textcircled{1} (0.25)(12.50) \\ = \$3.13 \text{ Discount}$$

$$12.5 \times 0.25 = 3.125$$

$$\textcircled{2} \begin{array}{r} 12.50 \\ - 3.13 \\ \hline \$9.37 \end{array} \text{ Sale Price}$$

$$\textcircled{3} \begin{array}{r} 6.5\% \text{ of } 9.37 \\ (0.065)(9.37) \\ = \$0.61 \text{ Tax} \end{array}$$

$$0.065 \times 9.37 = 0.60905$$

1. Find 25% of 12.50
2. Subtract it from the original to get the sale price.
3. Find 6.5% of the sale price to get the tax.
4. Add it to the sale price.

$$\begin{array}{r} \$9.37 \\ - 0.61 \\ \hline \$9.98 \end{array}$$

Cost of a shirt: \$52.50

Markup: 25%

Tax: 6.5%

$$\textcircled{1} \quad (0.25)(52.50) \\ = \$13.13$$

$$0.25 \times 52.5 = 13.125$$

$$\textcircled{2} \quad \begin{array}{r} \$52.50 \\ + 13.13 \\ \hline \$65.63 \end{array}$$

$$\textcircled{3} \quad \begin{array}{l} 6.5\% \text{ of } 65.63 \\ (0.065)(65.63) \\ = \$4.27 \end{array}$$

$$0.065 \times 65.63 = 4.26595$$

$$\textcircled{4} \quad \begin{array}{r} \$65.63 \\ + 4.27 \\ \hline \$69.90 \end{array}$$



1. Find 25% of 52.50
2. Add it to the original price
3. Find 6.5% of the new price
4. Add it to the new price.

Cost of shorts: \$22.50



✓ Markup: 75%

✓ Discount: 30%

✓ Tax: 6.375%

$$\textcircled{1} (0.75)(22.50) = 16.88$$

$$0.75 \times 22.5 = 16.875$$

$$\textcircled{2} \begin{array}{r} 22.50 \\ + 16.88 \\ \hline \$ 39.38 \end{array}$$

$$\textcircled{3} (0.30)(39.38) = \$11.81$$

$$0.3 \times 39.38 = 11.814$$

$$\textcircled{4} \begin{array}{r} \$ 39.38 \\ - 11.81 \\ \hline \$ 27.57 \end{array}$$

$$\textcircled{5} (.06375)(27.57) = \$1.76$$

$$0.06375 \times 27.57 = 1.757588$$

$$\textcircled{6} \begin{array}{r} \$ 27.57 \\ - 1.76 \\ \hline \end{array}$$

$$\boxed{\$ 29.33}$$

1. Find 75% of 22.50
2. Add it to the original price
3. Find 30% of the new price to get the discount
4. Subtract it from the new price to get the sale price
5. Find 6.375% of the sale price
6. Add it to the sale price

Homework

Yellow WS 4

Due Wed - end of
class