



**Practice Section D**

In this section, solutions for the practice questions contain commonly-made errors. For each question, circle the error(s) and give a correct solution.

1.

$$25\% \times 6 + \frac{1}{8} \times 2\frac{3}{4} \text{ expressed as a percent is equal to } \underline{\hspace{2cm}}.$$

Solution:

$$\begin{aligned} 25\% \times 6 + \frac{1}{8} \times 2\frac{3}{4} \\ &= 1.5 + \frac{1}{8} \times \frac{11}{4} \\ &= 1.5 + \frac{4+88}{32} \\ &= 1.5 + \frac{92}{32} \\ &= 1.5 + 2.90625 \\ &= 4.40625 \\ &= 440.625\% \end{aligned}$$

Practice Section E

Challenge Question. If you can do this one, then you get an A⁺. 😊

The population of an ant colony increases by 25% every day. There are 20 ants in this colony on Day 1. After how many days will the population of ants exceed 30% of 555?

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SOLUTIONS

Set O

Decimals, Fractions & Percents 2

**DECIMALS, FRACTIONS & PERCENTS 2****Practice Section A**

#	Decimal	Fraction	Percent
1	0.25	$\frac{1}{4}$	25%
2	0.125	$\frac{1}{8}$	12.5%
3	0.375	$\frac{3}{8}$	37.5%
4	0.50	$\frac{1}{2}$	50%
5	0.3125	$\frac{5}{16}$	31.25%
6	0.0625	$\frac{1}{16}$	6.25%
7	0.75	$\frac{3}{4}$	75%
8	0.875	$\frac{7}{8}$	87.5%
9	0.4375	$\frac{7}{16}$	43.75%
10	0.625	$\frac{5}{8}$	62.5%
11	0.8125	$\frac{13}{16}$	81.25%
12	0.5625	$\frac{9}{16}$	56.25%
13	0.03125	$\frac{1}{32}$	3.125%
14	0.78125	$\frac{25}{32}$	78.125%
15	0.34375	$\frac{11}{32}$	34.375%

**Practice Section B**

#	Question	Decimal	Fraction	Percent
1	$\frac{1}{2} \times \frac{1}{2}$	0.25	$\frac{1}{4}$	25%
2	$\frac{1}{8} \div \frac{1}{2}$	0.25	$\frac{2}{8} = \frac{1}{4}$	25%
3	$0.025 + 0.85$	0.875	$\frac{7}{8}$	87.5%
4	$\frac{1}{2} + \frac{11}{32}$	0.84375	$\frac{27}{32}$	84.375%
5	$\frac{7}{8} - \frac{1}{2}$	0.375	$\frac{3}{8}$	37.5%
6	$2.675 - 1.175$	1.5	$1\frac{1}{2} = \frac{3}{2}$	150%
7	$\frac{7}{8} - \frac{5}{16}$	0.5625	$\frac{9}{16}$	56.25%
8	$\frac{3}{4} \times 1.5$	1.125	$1\frac{1}{8} = \frac{9}{8}$	112.5%
9	$\frac{1}{3} \div \frac{4}{9}$	0.75	$\frac{9}{12} = \frac{3}{4}$	75%
10	$\frac{3}{8} \times \frac{1}{2}$	0.1875	$\frac{3}{16}$	18.75%
11	$2 - \frac{1}{4}$	1.75	$1\frac{3}{4} = \frac{7}{4}$	175%
12	$\frac{13}{16} + \frac{1}{8}$	0.9375	$\frac{15}{16}$	93.75%
13	$\frac{5}{8} \times \frac{3}{4}$	0.46875	$\frac{15}{32}$	46.875%
14	$\frac{5}{32} \div \frac{1}{4}$	0.625	$\frac{5}{8}$	62.5%
15	$1\frac{3}{16} - \frac{1}{2}$	0.6875	$\frac{11}{16}$	68.75%

**Practice Section C**

1. Solution:

$$\begin{aligned} & 35\% \times 65 - \frac{5}{8} \div 2 \frac{1}{2} \\ & = 0.35 \times 65 - \frac{5}{8} \div 2 \frac{1}{2} \\ & = 22.75 - \frac{5}{8} \div \frac{5}{2} \\ & = 22.75 - \frac{5}{8} \times \frac{2}{5} \\ & = 22.75 - \frac{10}{40} \\ & = 22.75 - 0.25 \\ & = 22.5 \\ & = 22 \frac{1}{2} = \frac{45}{2} \end{aligned}$$

2. Solution:

$$\begin{aligned} & 1 \frac{7}{16} - 2.875 + 75\% \times 66 + 0.125 \div 2 \\ & = \frac{23}{16} - 2.875 + 0.75 \times 66 + 0.125 \div 2 \\ & = 1.4375 - 2.875 + 49.5 + 0.125 \div 2 \\ & = 1.4375 - 2.875 + 49.5 - 0.0625 \\ & = 48.125 \end{aligned}$$

3. Solution:

$$\begin{aligned} & 5 - \left[3 \frac{3}{4} - \left(2 - \frac{19}{8} \right) + 75\% \right] \\ & = 5 - \left[\frac{15}{4} - \left(\frac{16}{8} - \frac{19}{8} \right) + 0.75 \right] \\ & = 5 - \left[\frac{30}{8} - \left(-\frac{3}{8} \right) + 0.75 \right] \\ & = 5 - \left[\frac{30}{8} + \frac{3}{8} + 0.75 \right] \\ & = 5 - \left[\frac{33}{8} + 0.75 \right] \\ & = 5 - 4.875 \\ & = 0.125 \\ & = 12.5\% \end{aligned}$$



4. Solution:

$$40\% \times 2 \times \text{number} = \frac{3}{4} + 40\% \times 6 + \text{number}$$

$$80\% \times \text{number} = 0.75 + 40\% \times 6 + 40\% \times \text{number}$$

$$80\% \times \text{number} = 0.75 + 0.4 \times 6 + 40\% \times \text{number}$$

$$80\% \times \text{number} = 0.75 + 2.4 + 40\% \times \text{number}$$

$$80\% \times \text{number} = 3.15 + 40\% \times \text{number}$$

$$40\% \times \text{number} = 3.15$$

$$0.4 \times \text{number} = 3.15$$

$$\text{number} = \frac{3.15}{0.4}$$

$$\text{number} = 7.875 = 7\frac{7}{8} = \frac{63}{8}$$

5. Solution:

The tax was added after the discount was applied. The price after discount, but before tax, can be found by dividing by the tax (1.12).

$$\text{The result is } \frac{\$34.68}{1.12} = \$30.96.$$

Now we have to consider the discount.

$$\text{price} - \text{price} \times 15\% = \$30.96$$

$$85\% \times \text{price} = \$30.96$$

$$\text{price} = \frac{\$30.96}{85\%}$$

$$\text{price} = \$36.42$$

The original price of the jacket was \$36.42.



Practice Section D

1. Solution:

There are two errors. The first occurs in line 3 when the two fractions are added together instead of multiplied. The second error occurs in the very last line of the solution. 4.40625 was multiplied by 100 instead of divided by 100.

The correct answer is:

$$\begin{aligned} & 25\% \times 6 + \frac{1}{8} \times 2\frac{3}{4} \\ & = 1.5 + \frac{1}{8} \times \frac{11}{4} \\ & = 1.5 + \frac{11}{32} \\ & = 1.5 + 0.34375 \\ & = 1.84375 \\ & = 0.0184375\% \end{aligned}$$

Practice Section E

Solution:

On Day 1, there are 20 ants.

On Day 2, there are 25 ants.

On Day 3, there are 31.25 (partial ants are allowed until the final answer). Continually multiplying by 1.25 (a 25% increase).

Knowing that 30% of 555 is 166.5, it is found that after 11 days the population will 186.2 ants.