

## 25% Sale

# T1

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24.00

Show your calculations.

$$\begin{array}{r} 32 \\ \times .25 \\ \hline 8 \end{array}$$
$$32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Julie ~~is~~ thinks that the 4 25%'s are being taken from the original price but the 2<sup>nd</sup> 25% is from the price of the item after the 1<sup>st</sup> 25%, and the 3<sup>rd</sup> is taken from the price after the 2<sup>nd</sup> 25% and so on...

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.12

Show your calculations.

$$\begin{array}{r} 24 \\ \times .25 \\ \hline 6 \end{array}$$

$$24 - 6 = 18$$

$$18 - \frac{18 \times .25}{1} = 13.5$$

$$13.5 - \frac{13.5 \times .25}{1} = 10.125$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

68% %

Show your calculations.

$$\frac{10.12}{24} = .4216666666666667$$

$$\frac{1.0}{.68375} = 1.4625$$

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## 25% Sale

# T2

This problem gives you the chance to:

- work with percentage increase and decrease
- 

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24

Show your calculations.

$$32 \times .25 = 8$$
$$32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Cause when you take 25% of 24 it is 18  
and then when you take 25% of 18 it is 13.5  
and the 25% percent off that would be  
\$10.25.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.25

Show your calculations.

$$\begin{aligned} 24 (.25) &= 6 \\ 24 - 6 &= 18 \\ 18 (.25) &= 4.5 \\ 18 - 4.5 &= 13.5 \\ 13.5 (.25) &= 3.25 \\ 13.5 - 3.25 &= 10.25 \end{aligned}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

41% %

Show your calculations.

$$10.25 \div .25 = 41\%$$

## 25% Sale

# T3

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.

How much does it cost in the sale?

\$ 24

Show your calculations.

$$.25 \cdot 32 = 8$$

$$32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Because each time you reduce the price of the jacket is different making the money you save each time less.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.12

Show your calculations.

$$24 \cdot .25 = 6 \quad 24 - 6 = 18$$

$$18 \cdot .25 = 4.5 \quad 18 - 4.5 = 13.5$$

$$13.5 \cdot .25 = 3.38 \quad 13.5 - 3.38 = 10.12$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

100 %

Show your calculations.

$$25\% \times 4 = 100\%$$

## 25% Sale

# T4

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24

Show your calculations.

$$32 \div 4 = 8$$

$$32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Because it doesn't keep taking 25% of the first price, it takes it off of the newest one.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 28.25

Show your calculations.

$$32 \div 4 = 8$$

$$24 \div 4 = 6$$

$$18 \div 4 = 4.50$$

$$13.50 \div 4 =$$

$$3.375$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

98 %

Show your calculations.

$$100 \div 32 = 3.125$$

$$\rightarrow 3.125 = 312.5\%$$

$$3.125 = 291\% \text{ [Rounded]}$$



## 25% Sale

# T5

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.

How much does it cost in the sale?

\$ 24.00

Show your calculations.

$$\begin{array}{r} 32 \\ \cdot .75 \\ \hline 160 \\ 2240 \\ \hline 24.00 \end{array}$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Because the prices aren't reduced by 25% of the original price, each time the price gets lower, the reduction gets lower.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$\begin{array}{r}
 24 \\
 .75 \\
 \hline
 120 \\
 1680 \\
 \hline
 1800
 \end{array}
 \quad
 \begin{array}{r}
 28 \\
 .75 \\
 \hline
 90 \\
 1260 \\
 \hline
 1350
 \end{array}
 \quad
 \begin{array}{r}
 13.5 \\
 .75 \\
 \hline
 675 \\
 9450 \\
 \hline
 10125
 \end{array}
 \quad
 10.13$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

40.2 %

Show your calculations.

$$\begin{array}{r}
 32.00 \\
 - 10.13 \\
 \hline
 21.87
 \end{array}$$

$$\begin{array}{r}
 21.87 = 32x \\
 \hline
 32 \quad 32 \\
 .402 = x
 \end{array}$$

$$\begin{array}{r}
 0.402 \\
 32 \overline{) 2.870} \\
 \underline{28} \phantom{0} \\
 070 \\
 \underline{64} \\
 6
 \end{array}$$

## 25% Sale

# S1

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.

How much does it cost in the sale?

\$ 24

Show your calculations.  $32 \cdot .25 = 8$

$$32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

$$24 \cdot .25 = 6, 24 - 6 = 18$$

$$18 \cdot .25 = 4.50, 18 - 4.50 = 13.50$$

$$13.50 \cdot .25 = 3.38, 13.50 - 3.38 = 10.12, 10.12 \text{ will be your final price.}$$

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.12

Show your calculations.

$$24 \cdot .25 = 6, 24 - 6 = 18$$

$$18 \cdot .25 = 4.50, 18 - 4.50 = 13.50$$

$$13.50 \cdot .25 = 3.38, 13.50 - 3.38 = 10.12$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

68.4 %

Show your calculations.

$$32 - 10.12 = \frac{21.88}{32} = 68.375\%$$

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## 25% Sale

# S2

This problem gives you the chance to:

- work with percentage increase and decrease
- 

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24

Show your calculations.

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Because it takes  
25% off of the 75%  
price

S2

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10,125

Show your calculations.

4. Julie buys her jacket after the four reductions.  
What percentage of the original price does she save?

31.64%

Show your calculations.

$$\frac{10.125}{32} \quad \frac{\quad}{100}$$

8

## 25% Sale

# S3

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24.<sup>00</sup>

Show your calculations.

$$32 \times .75 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

because, say she wants to buy  
a coat for 100.  $100 \times .75 = 75.00$   
 $75 \times .75 = 56.25$   $56.25 \times .75 = 42.19$   $42.19 \times .75 = 31.64$   
not 0

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$32 \times .75 = 24 \times .75 = 18 \times .75 = 13.5 \times .75 = 10.13$$

$$\frac{10.13}{32} \quad \frac{\quad}{100}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

31.7 %

Show your calculations.

$$\frac{10.13}{32} = \frac{X}{100} \cdot 32$$

$$(100) \cdot 3165 = \frac{X}{100}$$

$$31.65 = X$$



## 25% Sale

# S4

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24.00

Show your calculations.

$$32 \div 4 = 8.00$$

$$32 - 8 = 24$$

\$24.00

In the second week of the sale, the prices are reduced by 25% of the previous week's price. ~~18~~  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price. ~~13.50~~  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

you need to divide the current price  
by 4. Then subtract  $\frac{1}{4}$ .

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$24 \div 4 = 6 \quad * \quad 24 - 6 = 18$$

$$18 \div 4 = 4.50 \quad * \quad 18 - 4.50 = 13.50$$

$$13.50 \div 4 = 3.37 \quad * \quad 13.50 - 3.37 = \textcircled{\$10.13}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

50 %

Show your calculations.

$$100 \cdot 4 = 400$$

$$\cancel{100} \quad \frac{4}{16} \rightarrow \frac{2}{8} \rightarrow 50\%$$

## 25% Sale

# S5

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

Show your calculations.

$$\begin{array}{r} 25 \\ 32 \quad 100 \end{array}$$

\$ 24.00

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

Because the price will actually be \$a  
Since it only goes down about 3 more  
each time

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$32 \frac{25}{100} 24$$

$$\quad \quad \quad \underline{-6}$$

$$24 \frac{25}{100} 18$$

$$18 \frac{28}{100} 13.5$$

$$13.5 \frac{25}{100}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

\_\_\_\_\_ %

Show your calculations.

## 25% Sale

# S6

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.

How much does it cost in the sale?

\$ 24

Show your calculations.

$$0.25 \cdot 32 = 8$$

$$\begin{array}{r} 32 \\ - 8 \\ \hline 24 \end{array}$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

No, because it is 25%  
off of each week's price

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$\begin{array}{r}
 32 \\
 - 8 \\
 \hline
 24
 \end{array}$$

$$24 \cdot 0.25 = \frac{24}{6} = 6$$

$$18 \cdot 0.24 = \frac{18.00}{4.50} = 4.50$$

$$13.50 \cdot 0.24 = \frac{13.50}{3.38} = 4.00$$

$$\text{\$}10.13$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

Show your calculations.

31.6 %  
(or)

32.0%

$$\text{new} \div \text{original}$$

$$\$10.13 / 32$$

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## 25% Sale

# S7

This problem gives you the chance to:

- work with percentage increase and decrease
- 

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24

Show your calculations.

$$\frac{8}{32} \quad \frac{25}{100} \quad 32 - 8 = 24$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

because its not 25% of the original price but  
of the reduced one,

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$$\frac{25}{100} \quad \frac{10.125}{32}$$

S7

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.125

Show your calculations.

$$\frac{25}{100} \quad \frac{6}{24} \quad 24 - 6 = 18$$

$$\frac{25}{100} \quad \frac{4.5}{18} \quad 18 - 4.5 = 13.5$$

$$\frac{25}{100} \quad \frac{3.375}{13.5} \quad 13.5 - 3.375 = 10.125$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

31.64% %

Show your calculations.

$$\frac{31.64\% \cdot 10.125}{100} = \frac{3.203125}{100} = 0.03203125$$

8



## 25% Sale

# S8

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24

Show your calculations.

$$\begin{array}{r} 32 \\ \times .25 \\ \hline 160 \\ 640 \\ \hline 8.00 \end{array}$$
$$\begin{array}{r} 32 \\ - 8 \\ \hline 24 \end{array}$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.  
In the third week of the sale, the prices are again reduced by 25% of the previous week's price.  
In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

The 1<sup>st</sup> week it was \$24. The 2<sup>nd</sup> week it was \$18.  
The 3<sup>rd</sup> week it was \$13.50. The 4<sup>th</sup> week it  
was about \$10.13.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$\begin{array}{r} 24 \\ \times .25 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 24 \\ - 6 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 18 \\ \times .25 \\ \hline 4.5 \end{array}$$

$$\begin{array}{r} 18 \\ - 4.5 \\ \hline 13.5 \end{array}$$

$$\begin{array}{r} 13.5 \\ \times .25 \\ \hline 3.375 \end{array}$$

$$\begin{array}{r} 13.500 \\ - 3.375 \\ \hline 10.125 \end{array}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

about 68 %

Show your calculations.

$$\begin{array}{r} 32 \\ \times .68 \\ \hline 21.76 \end{array}$$

$$\begin{array}{r} 32 \\ - 21.76 \\ \hline 10.24 \end{array}$$

## 25% Sale

# S9

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.

How much does it cost in the sale?

\$ 24

Show your calculations.

$$\$32 \cdot .25 = 8 \cdot 3$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

She is wrong because on the 2nd week the price of the jacket would be 25% of 24\$

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.125

Show your calculations.

$$13.5 - .25 = 3375 \div 3 = 10.125$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

.32 %

Show your calculations.

## 25% Sale

# S10

This problem gives you the chance to:

- work with percentage increase and decrease

In a sale, all the prices are reduced by 25%.



1. Julie sees a jacket that cost \$32 before the sale.  
How much does it cost in the sale?

\$ 24<sup>00</sup>

Show your calculations.

$$\begin{aligned}32 &= 100\% \\32 - 25\% &= \text{sale} \\32 - \frac{1}{4} \cdot 32 &= 24\end{aligned}$$

In the second week of the sale, the prices are reduced by 25% of the previous week's price.

In the third week of the sale, the prices are again reduced by 25% of the previous week's price.

In the fourth week of the sale, the prices are again reduced by 25% of the previous week's price.

2. Julie thinks this will mean that the prices will be reduced to \$0 after the four reductions because  $4 \times 25\% = 100\%$ .

Explain why Julie is wrong.

it's not the original price which is reduced, it's the new price. That's means, that you reduce sth and then you reduce the reduced price and so on.

3. If Julie is able to buy her jacket after the four reductions, how much will she have to pay?

\$ 10.13

Show your calculations.

$$\begin{aligned} 32 - 25\% &= 24 \\ 24 - 25\% &= 18 \\ 18 - 25\% &= 13.5 \\ 13.5 - 25\% &= 10.125 \end{aligned}$$

4. Julie buys her jacket after the four reductions.

What percentage of the original price does she save?

31.66 %

Show your calculations.

$$\begin{aligned} 32 &= 100\% \\ 1 &= 3.125\% \\ 10.13 &= 31.66\% \end{aligned}$$