

## Outcome 1 - Undoing a Percentage Increase/Decrease

### Bronze example

**Examples...**

Original Quantity = 100%

A box of cereal is on special offer.

Each box contains 20% more than the standard box.

How many grams does the standard box contain?

Special Offer  
20% Extra Free!  
600 grams

$120\% = 600$   
 $1\% = 600 \div 120 = 5$   
 $100\% = 5 \times 100 = 500 \text{ grams}$

### Silver example

**Examples...**

Original Quantity = 100%

A pair of trainers are in the sales.

The trainers are reduced by 20%.

The trainers cost £23.20. How much did they cost before the sale?



$70\% = 23.20$   
 $1\% = 23.20 \div 80 = 0.29$   
 $100\% = 0.29 \times 100 = \text{£}29$

### Gold example


**Examples...**

Original Quantity = 100%

A carton of milk is on special offer.

The new carton is increased in volume by 12.5%.













The new carton contains 450 ml. How much did the standard carton contain?



$112.5\% = 450$   
 $1\% = 450 \div 112.5 = 4$   
 $100\% = 4 \times 100 = 400 \text{ ml}$













### Bronze Questions

Calculate the following original amounts...

- 1  50% increase  
Cost = £1200  
Original Price? 
- 2  10% increase  
Cost = £9900  
Original Price? 
- 3  20% increase  
Speed = 42 m.p.h.  
Original Speed? 
- 4  5% increase  
Weight = 315 g  
Original Weight? 
- 5  25% increase  
Length = 30 cm  
Original Length? 
- 6  55% increase  
Area = 1085 m<sup>2</sup>  
Original Area? 













### Silver Questions

Calculate the following original amounts...

- 1  25% decrease  
Cost = £187.50  
Original Price? 
- 2  20% decrease  
Cost = £1500  
Original Price? 
- 3  30% decrease  
Speed = 63 m.p.h.  
Original Speed? 
- 4  5% decrease  
Weight = 1140 g  
Original Weight? 
- 5  85% decrease  
Length = 3 cm  
Original Length? 
- 6  45% decrease  
Area = 880 m<sup>2</sup>  
Original Area? 

### Gold Questions

Calculate the following original amounts...

- 1  12.5% increase  
Cost = £900  
Original Price? 
- 2  25.5% decrease  
Cost = £6705  
Original Price? 
- 3  12.5% increase  
Speed = 67.5 km/hr  
Original Speed? 
- 4  20.5% increase  
Weight = 964 g  
Original Weight? 
- 5  37.5% increase  
Length = 2750 mm  
Original Length? 
- 6  62.5% decrease  
Area = 225 m<sup>2</sup>  
Original Area? 

## Bronze Answers

- |              |                       |
|--------------|-----------------------|
| 1. £800      | 2. £9000              |
| 3. 35 m.p.h. | 4. 300 g              |
| 5. 24 cm     | 6. 700 m <sup>2</sup> |

## Silver Answers

- |              |                        |
|--------------|------------------------|
| 1. £250      | 2. £1875               |
| 3. 90 m.p.h. | 4. 1200 g              |
| 5. 20 cm     | 6. 1600 m <sup>2</sup> |

## Gold Answers

- |              |                       |
|--------------|-----------------------|
| 1. £800      | 2. £9000              |
| 3. 60 km/hr. | 4. 800 g              |
| 5. 2000 mm   | 6. 600 m <sup>2</sup> |