


# Outcome 1 - Direct & Indirect Proportion

## Bronze example

**Examples...**

4 washing machines cost £1600. How much for 9 washing machines?




Washing Machines	Cost
4 →	1600
1 →	$1600 \div 4 = £400$
9 →	$400 \times 9 = £3600$

**\*\*Find the cost of ONE item first!\*\***

## Silver example

**Examples...**

It takes 2 men 9 hours to dig a hole. How long will it take 6 men?



Men	Hours
2 →	9
1 →	$9 \times 2 = 18$
6 →	$18 \div 6 = 2$

**Find out how long it takes ONE man first!**

**Fewer men take MORE time!**

## Gold examples

**Examples... Basic Proportion!**

It costs £12.60 to park in the city centre for 7 hours. Calculate the rate per hour.

$12.60 \div 7 = £1.80 \text{ per hour}$

600 pencils cost £18. How much does it cost for 500 pencils?

$18 \div 600 \times 500 = £15$

**Direct Proportion!**

A pet shop has enough feed to last 15 hamsters 2 weeks. They sell 5 hamsters. How long will the feed now last?

$15 \times 2 \div 10 = 3 \text{ weeks}$

**Indirect Proportion!**

## Bronze Questions

- 5 D.V.D.'s cost £40. How much for 7 D.V.D.'s?
- 7 beach balls cost £35. How much for 9 beach balls?
- 2 ice creams cost £3. How much for 5 ice creams?
- 3 cuddly toys cost £18. How much for 8 cuddly toys?
- 4 lava lamps cost £100. How much for 9 lava lamps?
- 6 bicycles cost £1800. How much for 8 bicycles?
- 8 cans of cola cost £7.20. How much for 3 cans of cola?
- 3 light bulbs cost £3.90. How much for 7 light bulbs?
- 4 hamburgers cost £5.60. How much for 7 hamburgers?
- 6 air fresheners cost £16.20. How much for 5 air fresheners?

## Silver Questions

- It takes 3 men 12 hours to shovel snow. How long would it take 4 men?
- It takes 4 men 6 days to tile a roof. How long would it take 8 men?
- 5 tellers clear a queue in the bank in 6 minutes. How long would it take 10 tellers?
- It takes 2 men 4 hours to paint a wall. How long would it take 8 men?
- 6 waiters take 5 minutes to clear tables. How long would it take 15 waiters?
- It takes 4 stage hands 8 minutes to change a set. How long would it take 8 stage hands?
- 3 cleaners take 4 hours to clean a school. How long would it take 6 cleaners?
- It takes 2 trucks 8 hours to clear debris from a building site. How long would it take 4 trucks?
- It takes 2 men 16 hours to fix a road. How long would it take 8 men?
- It takes 4 firemen 30 minutes to extinguish a blaze. How long would it take 6 firemen?

## Gold Questions

- Kelly exchanged £40 for \$50.80. Calculate the exchange rate.
- A man can plaster an area of 200 cm<sup>2</sup> in 8 minutes. He works for 15 minutes plastering. How much area does he plaster?
- It took 3 pupils 20 minutes to tidy the classroom. If 10 pupils had done the job, how much QUICKER would it have been done?
- If they cost 4p each, Jim has just enough money to buy 60 pencils. With the same money, how many could he buy if they only cost 3p each?

## Bronze Answers

- |          |            |
|----------|------------|
| 1. £56   | 2. £45     |
| 3. £7.50 | 4. £48     |
| 5. £225  | 6. £2400   |
| 7. £2.70 | 8. £9.10   |
| 9. £9.80 | 10. £13.50 |

## Silver Answers

- |              |                |
|--------------|----------------|
| 1. 9 hours   | 2. 3 days      |
| 3. 3 minutes | 4. 1 hour      |
| 5. 2 minutes | 6. 4 minutes   |
| 7. 2 hours   | 8. 4 hours     |
| 9. 4 hours   | 10. 20 minutes |

## Gold Answers

1. £1 = \$1.27
2. 375 cm<sup>2</sup>
3. It will take 6 minutes, 14 minutes quicker
4. 80 pencils