

Direct Proportion

1



5 pens cost the same as 2 notebooks.
8 pens cost £10.08. How much does one notebook cost?

$$1 \text{ pen} = £1.26, 5 \text{ pens} = £6.30$$

$$2 \text{ notebooks} = £6.30, 1 \text{ notebook} = £3.15$$

Answer £3.15

2



A 3.5 m piece and a 5.5 m piece of the same wire weigh 1.62 kg altogether.
How much does the longer piece weigh?

$$9 \text{ m weighs } 1.62 \text{ kg, so } 1 \text{ m weighs } 0.18 \text{ kg}$$

$$5.5 \times 0.18 = 0.99$$

Answer 0.99 kg

3



4 m of a fabric costs £9.80 more than 2.6 m of the same fabric.
How much does 5 m of the fabric cost?

$$\text{the extra } 1.4 \text{ m costs } £9.80$$

$$1 \text{ m costs } £7, 5 \times £7 = £35$$

Answer £35

4



A train travels 135 km in 1 hour 30 minutes. At the same speed, how long does it take to travel 210 km?

$$90 \text{ minutes, so } 1.5 \text{ km a minute}$$

$$210 \div 1.5 = 140 \text{ minutes}$$

Answer 2 hours 20 minutes

5



Pack A has 6 cans of 330 ml for £3.60.
Pack B has 4 bottles of 500 ml for £4.40. Which pack is better value?

$$A: 1980 \text{ ml for } £3.60, 18.2p \text{ per } 100 \text{ ml}$$

$$B: 2000 \text{ ml for } £4.40, 22p \text{ per } 100 \text{ ml}$$

Answer Pack A

6



Ann packs 45 boxes in 30 minutes.
Ben packs 60 boxes in 48 minutes.
Working together at these rates, how long do they take to pack 330 boxes?

$$1.5 + 1.25 = 2.75 \text{ boxes a minute}$$

$$330 \div 2.75 = 120 \text{ minutes}$$

Answer 2 hours

7



A smoothie recipe for 2 people uses 150 ml of milk, 1 banana and 90 g of strawberries. Kai has 1 litre of milk, 8 bananas and 500 g of strawberries. He makes smoothies for as many people as he can. How much milk is left?

$$\text{each person: } 75 \text{ ml, half a banana, } 45 \text{ g}$$

$$\text{strawberries: } 11 \text{ people, } 1000 - 825$$

Answer 175 ml

8



A printer uses 3 ink cartridges to print 1800 pages. A cartridge costs £14.50. A school prints 150 pages a day for 190 days. How much does the school spend on cartridges?

$$28\,500 \div 600 = 47.5 \text{ cartridges}$$

$$48 \text{ cartridges} \times £14.50 = £696$$

Answer £696