Math 1435 – Ratio practice problems

1. A carpenter earns $8 per hour and a carpenter’s helper is paid $6 per hour. What is the ratio of their earnings?
2. A reciprocating saw is driven by a motor speed of 1750 rpm, but the blade speed is reduced by a worm gear to 437.5 rpm. What is the ratio of motor to blade speed?
3. To make glue, 1 oz. of glue mix is added to 16 oz. of water. What is the ratio of water to glue?
4. Divide $144 between 2 workers in the ratio of 5:7. (hint, there are 12 parts)

# Direct proportions

1. A cabinetmakers van uses 2.7L to drive 12 km. how many litres will he use to drive 156 km?
2. A car travels 75 km in 50 min, how far will the car travel in 2-1/2 hrs?
3. Three cabinets of equal size weigh 112 lbs, how much will 19 cabinets weigh.
4. An employee earns $485.00 for working 36 hours, what would his pay be if he works 43 hrs?

# Indirect proportions

1. A crew of 6 carpenters frame an apartment building by working 24 hours. How many carpenters are required to finish the job in 16 hours?
2. An 8” dia. pulley revolves at 1725 rpm. What is the speed of the 3” dia. Driven pulley?
3. If I drive 120 km/ hr and reach my destination in 3 hours. How long will it take me to drive the same distance at 92 km/hr?
4. Five lumberjacks can cut down 32 trees in 8 hours. How long will it take 7 lumberjacks to cut down the same amount of trees?

Math 1435 – Ratio practice problems – Answer Key

# Ratio Practice Problems

1. Carpenter $8.00, Helper $6.00

Ratio = 8:6

**Ratio = 4:3 (reduced to lowest terms)**

1. Recip. Saw 1750 rpm motor, blade speed 437.5 rpm

Ratio = 1750:437.5 (divide both by 437.5)

**Ratio = 4:1**

1. Glue 1 oz mix to 16 oz water.

**Water to glue ratio 16:1**

1. $144.00 divided between 2 workers at a ratio of 5:7

$144.00/12 parts (5+7) = $12.00 per part

**Worker 1 = 5 x $12.00 = $60.00**

**Worker 2 = 7 x $12.00 = $84.00**

# Direct Proportions (cross multiply)

1. The van uses 2.7L for 12 km – how much for 156 km

=

12 X = 2.7 x 156 (cross multiply

12X = 421.2

X =

X = 35.1

**Therefore, 156km will use 35.1 L of gas.**

Math 1435 – Ratio practice problems – Answer Key

# Direct proportions Cont.

1. 75 km in 50 min, how far in 2-1/2 hours

50X = 75 x 150 (cross multiply)

50X = 11,250

X =

X = 225

**Therefore you can travel 225 km in 2-1/2 hrs (150 min)**

1. 3 cabinets = 112 lbs - how much will 19 cabinets weigh

3X = 112 x 19 (cross multiply)

3X = 2,128

X =

X = 709.3

**Therefore 19 cabinets will weigh 709.3 lbs.**

Earns $485.00 for 36 hours, how much for 43 hours?

36X = 485 x 43 (cross multiply)

36X = 20,855

X =

X = 579.30

**Therefore the employee will earn $579.30 for 43 hours.**

Math 1435 – Ratio practice problems – Answer Key

# Indirect proportions (equal sides)

1. 6 carpenters in 24 hours, how many carpenters to finish in 16 hours.

6 x 24 = 16 \* X

144 = 16X

= X

X =9

**Therefore 9 carpenters are needed to finish in 16 hours.**

1. 8” pulley revolves at 1725 rpm – how fast for a 3” pulley

8 x 1725 = 3 \* X

13,800 = 3X

= X

X = 4600 rpm

**Therefore the 3” pulley will turn at 4600 rpm.**

1. 120 km/hr in 3 hrs, how long to drive the same distance at 92 km/hr

120 x 3 = 92 \* X

360 = 92X

= X

X = 3.9 hours

**Therefore it would take 3.9 hours driving the same distance at 92 km/hr.**

1. 5 lumberjacks 32 trees in 8 hours, how long for 7 lumberjacks cut down the same number of trees.

5 x 8 = 7 \* X

40 = 7X

= X

X = 5.71 hours

**Therefore 7 lumberjacks can cut down 32 trees in 5.71 hours.**