Rates & Proportion Mastery

Practice Worksheet (Compact Layout)

I DO

4 painters take 12 hours to paint 1 house.
(a) How many hours will 3 painters take to paint 2 of these houses?

WE DO

5 machines take 8 hours to print 1 batch of books.
(a) How many hours will 4 machines take to print 3 of these batches?

YOU DO 1

6 chefs take 5 hours to bake 1 giant wedding cake.
(a) How many hours will 2 chefs take to bake 3 of these giant cakes?

YOU DO 2

2 gardeners take 14 hours to landscape 1 park.
(a) How many hours will 4 gardeners take to landscape 5 of these parks?

CHALLENGE

4 builders take 6 days, working 8 hours a day, to build 2 extensions.

How many days will 3 builders take, working 10 hours a day, to build 5 of these extensions?

ANSWERS & WORKED SOLUTIONS

I Do

Step 1: Total 'painter-hours' needed for 1 house: 4 painters × 12 hours = 48 painter-hours.

Step 2: Total painter-hours needed for 2 houses: 48 × 2 = 96 painter-hours.

Step 3: Divide total hours by new number of painters (3): 96 ÷ 3 = 32 hours. **Answer: 32 hours**

We Do

Step 1: Total 'machine-hours' needed for 1 batch: 5 machines × 8 hours = 40 machine-hours.

Step 2: Total machine-hours needed for 3 batches: 40 × 3 = 120 machine-hours.

Step 3: Divide total hours by new number of machines (4): 120 ÷ 4 = 30 hours. **Answer: 30 hours**

You Do 1

Step 1: Total 'chef-hours' needed for 1 cake: 6 chefs × 5 hours = 30 chef-hours.

Step 2: Total chef-hours needed for 3 cakes: 30 × 3 = 90 chef-hours.

Step 3: Divide total hours by new number of chefs (2): 90 ÷ 2 = 45 hours. **Answer: 45 hours**

ANSWERS & WORKED SOLUTIONS (CONTINUED)

You Do 2

Step 1: Total 'gardener-hours' needed for 1 park: 2 gardeners × 14 hours = 28 gardener-hours.

Step 2: Total gardener-hours needed for 5 parks: 28 × 5 = 140 gardener-hours.

Step 3: Divide total hours by new number of gardeners (4): 140 ÷ 4 = 35 hours. **Answer: 35 hours**

Challenge

Step 1: Total 'builder-hours' needed for 2 extensions: 4 builders × 6 days × 8 hours/day = 192 builder-hours.

Step 2: Builder-hours needed for 1 extension: 192 ÷ 2 = 96 builder-hours.

Step 3: Builder-hours needed for 5 extensions: 96 × 5 = 480 builder-hours.

Step 4: Determine how many builder-hours the new team provides per day: 3 builders × 10 hours/day = 30 builder-hours per day.

Step 5: Divide total required hours by daily hours provided: 480 ÷ 30 = 16 days. **Answer: 16 days**