

2021-01-04

Monday, January 4, 2021

9:55 AM

MM

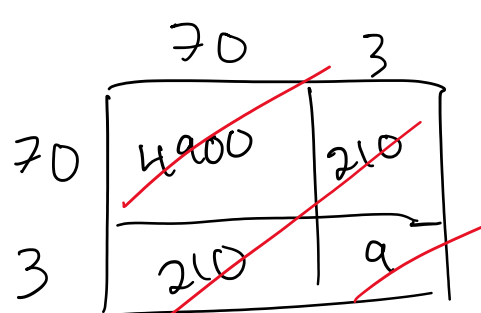
$$1) 23 \times 50 = 23 \times 5 \times 10 \quad \text{OR} \quad 23 \times 50 = 11.5 \times 100 = 1150$$

$$= (20+3) \times 5 \times 10$$

$$= (100 + 15) \times 10$$

$$= 1150 \quad \text{OR} \quad 23 \times 5 \times 10 = \frac{23 \times 10}{2} \times 10 = 1150$$

2) 73^2



Trick:

$$(70+3)(70+3) = 70^2 + 70 \cdot 3 + 3 \cdot 70 + 3^2$$

$$= 70^2 + 2 \cdot 70 \cdot 3 + 3^2$$

$$(70+3)^2 = 70^2 + 2 \cdot 70 \cdot 3 + 3^2$$

eg

$$996^2 = (995+1)^2$$

$$= 995^2 + 2 \cdot 995 \cdot 1 + 1^2$$

995 × 100

$$= 990,25 + 1990 + 1$$

$$= 992,016$$

Renew A

- 1) Multiply $(14/15) \times (25/7)$. If necessary, express your answer as an improper fraction in simplest form.

$$\frac{14}{15} \times \frac{25}{7} = \frac{2 \times 5}{3 \times 1} = \frac{10}{3}$$

- 2) Apples cost \$1.05 each and oranges \$1.15 each. You buy four apples and three oranges and you pay with a \$10 bill. How much change does the seller give back to you? Write your answer in dollars and cents, with no units.

Careful: looking for change, not cost.

$$4 \times 1.05 + 3 \times 1.15$$

$$= 7 + 0.20 + 0.45 = 7.65$$

$$10 - 7.65 = 2.35$$

- 3) Alice has an extensive library of books, but has not finished reading all of them. The ratio of finished books to unfinished books is 2:5. A week later, Alice has finished 24 books. The new ratio of finished books to unfinished books is then 4:7. How many books are in her library?

Ratio of finished to unfinished :	2:5	$\left(\begin{array}{l} 20 : 50 \\ 40 : 70 \end{array} \right)$
After reading 24 books:	4:7	

① What is not changing?

Total books.

start	70	× 11
end	110	× 7

② Multiply to get equivalent values

$$2:5 \times 11 \rightarrow 22:55$$

$$4:7 \times 7 \rightarrow 28:49$$

$$+60 \left(\begin{array}{l} 22 \square : 55 \square \\ 28 \square : 49 \square \end{array} \right) - 60$$

③ Equate # of blocks to change

$$6 \square = 24$$

④ Solve for \square

$$\square = 4$$

⑤ Answer:

$$22 \square + 55 \square = 77 \square = 77 \times 4 = 308$$