

MATH 5 CLASSWORK 21

March 30, 2025

Proportions

Proportion is an equivalent fraction:

$$\frac{3}{2} = \frac{6}{x} \quad x = \frac{6}{3} \cdot 2$$

Property of Proportion:

$$\frac{a}{b} = \frac{c}{d} \quad \longrightarrow \quad a \cdot d = b \cdot c$$

$$\frac{a}{b} = \frac{c}{d} \quad \longrightarrow \quad \frac{a}{c} = \frac{b}{d}$$

1. To make 13 cookies you need 2 cups of flour. How much flour you need to make 20 cookies?

13 cookies – 2 cups

20cookies – x cups

$$\frac{13}{20} = \frac{2}{x}$$

$$13x = 2 \cdot 20$$

2. A metal bar ten meters long weighs 128 kg. What is the weight of a similar bar that is two meters four cm long? (133.12kg)
3. If twelve inches correspond to 30.48 centimeters, how many centimeters are there in thirty inches? (76.2cm)

HOMWORK 21

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1. Please review base 4, 13, and binary numbers for the next class.
2. Write each of the following expressions in the form 2^{n5^k} :

(a) $\frac{2^2 5^8}{2^5 5^3} =$

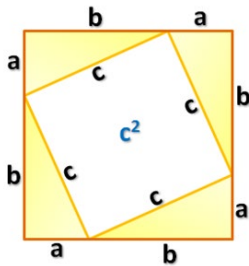
(b) $(2^3)^2 10^2 5^{-3} =$

(c) $\frac{2^8 5^{-14}}{10^{-3}} =$

3. Calculate:

$$\frac{1}{\left(0.\bar{3} + \frac{1}{6}\right) \cdot \frac{2}{3}} =$$

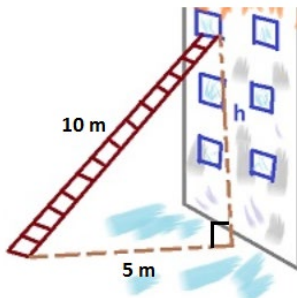
4. A piece of cable 8.5 cm long weighs 52 grams. What will a 10-cm length of the same cable weigh? [Use proportion]
5. Typically, 250 g of orange juice contain around 24 g of sugar. (Check the label if you don't believe me). What is percentage of sugar by mass in this solution? [Use proportion]
6. To make 13 cookies you need 2 cups of flour. How much flour you need to make 30 cookies? [Use proportion]
7. Mary can read 22 pages in 30 minutes. How long would it take her to read a 100-page book? Write your answer in hours and minutes and round to the nearest minute, if needed. [Use proportion]
- 8.



Prove Pythagorean theorem by expressing the area of the square as

1. side x side
2. Sum of 4 right angle triangles and a square

- 9.



Find the distance from the window to the ground h .