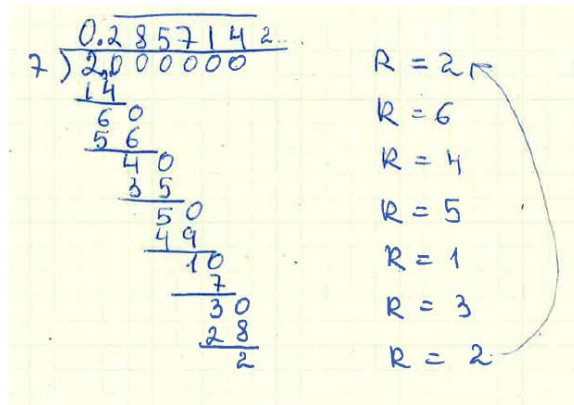


Classwork 7,
November 8, 2020

- Translating recurring decimals to regular fractions
- Equations with absolute value

$$\frac{2}{7}$$



Find simple fractions for $0.\overline{3}$, $0.\overline{71}$,

$0.\overline{3} = x$, multiply by 10. Why? Because we need to have something we know.

$$3.\overline{3} = 10x$$

$$3 + 0.\overline{3} = 10x$$

$$3 + x = 10x$$

Equations with absolute values.



The two possibilities represented by $|x| = 5$

(which gives) or, which gives.

$|x| = 5$
has two solutions:

$x = 5$ and $x = -5$.

$|x - 1| = 4$
also has two solutions:

$x - 1 = 4$
 $x = 5$

$x - 1 = -4$
 $x = -4 + 1$
 $x = -3$

HOMEWORK 7,
November 8, 2020

1. Compute:

$$\begin{array}{lll} -7 - (-9) = & -(-6 + (-4)) = & -3 - (7 + (-6)) = \\ -3 - (-4) + (-5) = & -(-2) + 5 = & -\frac{3}{4} - (-1\frac{1}{4}) = \\ |(-3) + (-5)| = & -|3 + (-6)| = & -|(-2) - (-6)| + 1 = \end{array}$$

2. Find a simple fraction form for the following repeating decimals:

$$\text{a) } 0.\bar{6} \qquad \text{b) } 0.\bar{7} \qquad \text{c) } 0.\bar{8} \qquad \text{d) } 0.\overline{81}$$

3. Solve equations:

$$\begin{array}{lll} \text{(a) } \frac{3}{4}x = 2 & \text{(b) } |13x + 11| = 15 & \text{(c) } \frac{2}{3}x - \frac{1}{4} = \frac{1}{3}x + \frac{1}{2} \\ \text{(d) } |x| = 3 & \text{(e) } z + |-6| = -15 & \text{(f) } |y - 8| = 12 \end{array}$$

4. Factorize (i.e. pull something out of parenthesis):

$$\text{(a) } ab + ac = \quad \text{(b) } abc + bcd = \quad \text{(c) } 3ab + 9cd = \quad \text{(d) } y(x - 1) + z(x - 1) =$$

5. Calculate using factorization:

$$\begin{array}{l} \text{(a) } 12 \cdot 17 + 35 \cdot 13 + 17 \cdot 23 = \\ \text{(b) } 41 \cdot 80 - 25 \cdot 41 + 55 \cdot 29 = \end{array}$$

6. The teacher asked the students to multiply a given number by 4 and then add 15. However, Alex multiplied the number by 15 and then added 4 — and still got the correct answer. What number was it?

7. One can measure temperature using either the Fahrenheit scale (common in the US and Britain) or the Celsius scale (in most other countries). The relation between the two is given by

$$C = \frac{5}{9}(F - 32) \quad [C \text{ in the temperature in Celsius, } F - \text{ in Fahrenheit}]$$

(a) Is there a temperature which gives the same value on both scales ($F = C$)?

(b) Is there a temperature which in Fahrenheit scale is twice as large as in Celsius ($F = 2C$)?