

MATH5 CLASSWORK 24: REVIEW 2

May 3, 2020

- *Binary numbers. Powers of 2:*

n	0	1	2	3	4	5	6	7	8	9
2 ⁿ	1	2	4	8	16	32	64	128	256	516

Numbers in decimal notation can be presented like this

$$351 = 1 \cdot 2^8 + 0 \cdot 2^7 + 1 \cdot 2^6 + 0 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 1 \cdot 2^0 = 101011111b$$

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- Square roots $\sqrt{a^2} = a$

$$\sqrt{8} = \sqrt{4 \cdot 2} = \sqrt{4} \cdot \sqrt{2} = \sqrt{2^2} \cdot \sqrt{8} = 2 \cdot \sqrt{2}$$

$$\sqrt{a^8} = \sqrt{(a^4)^2} = a^4$$

- Proportions

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

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

$$13x = 2 \cdot 20$$

MATH5 HOMEWORK 24: REVIEW 2

May 3, 2020

1. Binary numbers:

a. Write as binaries: 35, 11, 40

b. Write as Decimals: 101010b, 11100011b

2. Solve equations:

a) $\frac{3}{8}x = \frac{1}{3}$

b) $|2x - 5| = 1$

c) $\frac{x-2}{x-1} = 3$

3. Simplify:

$$\frac{6^5 \cdot 2^4}{3^5 \cdot 2^2} =$$

$$\frac{42^2}{6^2} =$$

$$\frac{9^2 \cdot 2^4}{6^2} =$$

$$\sqrt{\frac{4^2}{5^{10}}} =$$

$$\sqrt{12} =$$

4. A piece of cable 8.5 cm long weighs 52 grams. What will a 10-cm length of the same cable weigh?

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

a) $0.\overline{73}$

b) $0.\overline{81}$

6. Open parenthesis, simplify:

(a) $3(a - 5) - 2(2a - 9) =$

(b) $12x - 3x(x + 4) =$

(c) $5x - 5(7 - a + x) =$

(d) $-3z - (z - 4) + 2(2z - 5) =$

(e) $a(a + b) + b(a + 1) =$

(f) $2a(a - 2) - a(a - 1) =$

7. Open parenthesis, simplify.

$$(2x - 3)^2 =$$

$$(4x - 5)(4x + 5) =$$