

MATH 5 CLASSWORK 23 Review

May 4, 2025

1. $a^0 = 1$
2. $a^m \cdot a^n = a^{m+n}$
3. $a^m \div a^n = \frac{a^m}{a^n} = a^{m-n}$
4. $(ab)^n = a^n \cdot b^n$
5. $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$
6. $a^n = \frac{1}{a^{-n}}$
7. $(a^m)^n = a^{m \cdot n}$

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

20 cookies – x cups

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

$$13x = 2 \cdot 20$$

MATH 5 HOMEWORK 22

April 26, 2018

1. Simplify:

$$(a) \left(\frac{5a^2b^5}{4a^3b^3} \right)^3 =$$

$$(b) (2z^2 \cdot 3z^3 \cdot z)^2 =$$

$$(c) \frac{(-ab)^8}{(ab)^2} =$$

$$(d) \left(\frac{3ab^3}{15b} \right)^2 \cdot \frac{75c}{a^2b^6} =$$

$$(e) \left(\frac{3a^5b^2}{21ab} \right)^2 \cdot \frac{7^4}{a^{16}b^2} =$$

2. Simplify:

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

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

$$\frac{9^2 \cdot 2^4}{6^2} = \frac{\sqrt{4^2}}{\sqrt{5^{10}}} =$$

$$\sqrt{12} =$$

3. Solve equations:

$$a) 7x = 2$$

$$b) 12x = 6$$

$$c) 7x = 14$$

$$d) 21x = 7$$

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

$$f) \frac{11}{113}x = \frac{121}{3}$$

$$g) \frac{3}{4}(x+8) = 10$$

$$h) \frac{1}{2}(x+1) = x-3$$

$$i) \frac{1}{2}x + \frac{1}{3}x = x - \frac{1}{12}$$

$$j) \frac{3x+2a}{2a-5x} = -1$$

4. Solve equations:

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

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

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

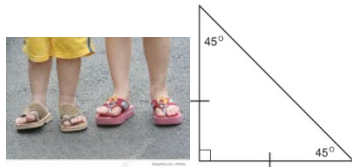
5. Open parenthesis, simplify:

$$2a(2a-3) - 3(2a+3) =$$

$$(2a-3)(2a+3) =$$

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

6. Find legs....



Find the length of legs, if hypotenuse is 10?

7. Binary numbers:

a. Write as binaries: 35, 11, 40

b. Write as Decimals: 101010b, 11100011b

8. Find cable weight:

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

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

a) $0.\overline{73}$

b) $0.\overline{81}$

~~10. 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) $2a(a - 2) - a(a - 1) =$ _____~~