

Warm-up

A jar contains 30 red marbles, 50 blue marbles, and 20 white marbles. You pick on marble from the jar at random. Find each theoretical probability.

a) P(red) $\frac{30}{100} = \frac{3}{10}$

b) P(blue) $\frac{5}{10} = \frac{1}{2}$

c) P(not white) $\frac{8}{10} = \frac{4}{5}$

d) P(red or blue) $\frac{4}{5}$

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L3.1

Integer Exponents

Obj: Review and practice applying the properties of exponents for integer exponents.

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Vocabulary

variable
↓
 $3x^2$
↑
term

coefficient → $3x^2$ ← exponent

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Properties of Exponents

Product of Powers	$x^a \cdot x^b = x^{a+b}$ add
Quotient of Powers	$\frac{x^a}{x^b} = x^{a-b}$ subtract
Power of a Power	$(x^a)^b = x^{ab}$ mult
Power of a Product	$(xy)^a = x^a y^a$ dist
Power of a Quotient	$\left(\frac{x}{y}\right)^a = \frac{x^a}{y^a}$ dist
Zero Power	$x^0 = 1$
Negative Power	$\frac{1}{x^a} = x^{-a}$ flip fraction

$(2x)^4$

$\frac{2^1}{2^1} = 1 = 2^0$

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Example 1

Rewrite each expression in the form kx^n , where k is a real number, n is an integer, and x is a nonzero real number.

① PEMDAS
② apply prop.

$$(5x^5) \cdot (-3x^2)$$

$$\boxed{-15x^7}$$

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Complete Example 2 b-d on pg. 3-4

b) $\frac{3x^5}{(2x)^4} = \frac{3x^5}{2^4 x^4} = \frac{3x^5}{16x^4} = \boxed{\frac{3x^1}{16}}$

c) $\frac{3}{(x^2)^{-3}} = \frac{3}{x^{-6}} = \frac{3x^6}{1}$ or $3x^6$

d) $\frac{x^{-3}x^4}{x^8} = \frac{x^1}{x^8} = \frac{x^{-7}}{1} = \boxed{\frac{1}{x^7}}$

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Complete Exercise 1-3 on pg. 4

1) $2x^{15}$

2)

3)

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