

Review

Powers:

$$a^n = a \times a \times a \times \dots \times a \text{ (} n \text{ times)}$$

$$a^0 = 1$$

read: *a-to-the-zero*

$$a^1 = a$$

is just itself '*a*'

$$(ab)^n = a^n \times b^n$$

$$a^n a^m = a^{n+m}$$

$$\frac{a^n}{a^m} = a^{n-m}$$

$$a^n = \frac{1}{a^{-n}} \quad , \quad a^{-n} = \frac{1}{a^n}$$

Classwork

1. Simplify the expressions:

(a) $(2z^2 \cdot 3z^3 \cdot z)^2$

(b) $(4c^2 \cdot c^3)^3$

(c) $\left(\frac{5g^4b^5}{4g^2b^3}\right)^3$

(d) $\left(\frac{8dg^2}{3d^3g^4}\right)^3$

2. Find *x*:

a) $|-52 + 48| = x$

b) $|-52| + x = |48|$

c) $|x| = 48$

d) $|x - 1| = 53$

3. Open the brackets:

a) $(-6a - 7b + 8) \cdot 3 =$

b) $-b + b(x - 1) =$

c) $2(a - b) - 2(6 - b + a) =$

d) $(a + 2)(a^2 + a + 2) - 2a(a - 1) =$

4. Solve the equations:

a) $5(3x - 2) - (14x - 8) = 18$

b) $\frac{3}{4}x = \frac{3}{5}x + 3$

c) $\frac{3}{x} = \frac{15}{4}$

5. Suppose that \$100 is deposited into an account and the amount doubles every 8 years. How much will be in the account after 40 years? Express your answer using powers.

6. At the beginning of an epidemic, 50 people are sick. If the number of sick people triples every other day, how many people will be sick at the end of 2 weeks? Express your answer using powers.