Review

Powers: $a^n = a \times a \times a \times ... \times a$ (*n* times)

$a^0 = 1$ read: *a*-to-the-zero
$a^1 = a$ is just itself '*a*'
$(ab)^n = a^n \times b^n$
$a^n a^m = a^{n+m}$
$\dfrac{a^n}{a^m} = a^{n-m}$
$a^n = \dfrac{1}{a^{-n}}$, $a^{-n} = \dfrac{1}{a^n}$

Classwork & Homework 11

1. Simplify the expressions:

   (a) $(2z^2 . 3z^3 . z)^2$

   (b) $(4c^2 . c^3)^3$

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

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

   (e) $(4cd^5 . dc^3)^7$

   (f) $(4c^{-5} . c^3)^7$

   (g) $(2zab^4 . 4a^{-3} . z)^5$

   (h) $\left(\dfrac{4d^4 mnn^4}{2n^{25} dmd^3}\right)^3$

   (i) $\left(\dfrac{8dk^4}{3k^{-5} d^3}\right)^3$

   (j) $\left(\dfrac{5\,gk^{12} ba^5}{4\,kg^{-2} ab^3}\right)^4$

2. Find x:
   a) $|-52 + 48| = x$

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

c) $|x| = 48$

d) $|x - 1| = 53$

3. Open the brackets:
   a) $(-6a - 7b + 8) * .3 =$

   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.

   The following 2 problems don't need to be redone if you've done them as part of previous homeworks. However, please note which homeworks we should refer to to find your solutions.

7. Jace had twice as many chocolate ice cream cones as vanilla ice cream cones. After eating 10 cones of each kind (not on the same day hopefully ☺), he now has three times as many chocolate ice cream cones as vanilla ice cream cones. How many chocolate ice cream cones did he originally have? Please solve using an equation. Guess and check will not get the full credit.

8. Captain John, a pirate, can drink a barrel of rum in 14 days. If he drinks the barrel together with pirate Bill, they will finish the barrel in 10 days. How long would it take Bill to drink the barrel of rum alone?
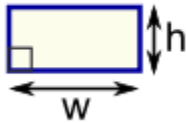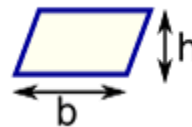
Area is the size of a surface!
http://www.mathsisfun.com/area.html
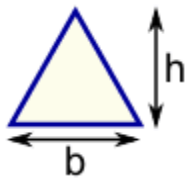
Triangle
Area = ½ × b × h
b = base
h = vertical height

Square
Area = a^2
a = length of side

Rectangle
Area = w × h
w = width
h = height

Parallelogram
Area = b × h
b = base
h = vertical height

Circle
Area = $\pi \times r^2$
Circumference = $2 \times \pi \times r$
r = radius
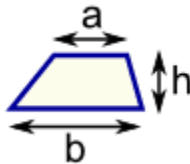
Trapezoid (US)
Trapezium (UK)
Area = ½(a+b) × h
h = vertical height

9. Compute the area of the figures below. The picture is not to scale, so do not try measuring the lengths – use the numbers given.

3

2

5

3

2

3

2

3