Math 5C: Homework 10 December 9, 2018

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*'
$(ab)^n = a^n \times b^n$
$a^n a^m = a^{n+m}$
$\frac{a^n}{a^m} = a^{n-m}$
$a^n = \frac{1}{a^{-n}}$, $a^{-n} = \frac{1}{a^n}$

Homework

1. Simplify the expressions:

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

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

   (c) $(2zab^4.4a^{-3}.z)^5$

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

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

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

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

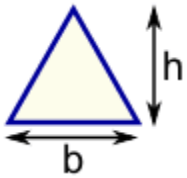
4. Solve the equations:

   a) $5(3x - 2) - (14x - 8) = 18$
   b) $\frac{3}{4}x = \frac{3}{5}x + 3$
   c) $\frac{3}{x} = \frac{15}{4}$

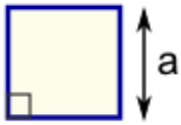
5. Suppose that $100 is deposited into an account and the amount doubles every 8 years. How much will be in the account after 40 years? Express your answer using powers.

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.

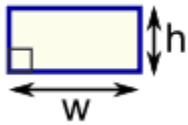
Area *is the size of a surface!*
http://www.mathsisfun.com/area.html



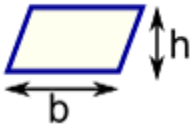
Triangle
Area = ½ × b × h
b = base
h = vertical height



Square
Area = a^2
a = length of side

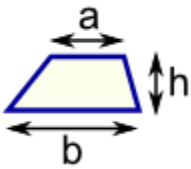


Rectangle
Area = w × h
w = width
h = height



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

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