Daily Practice 20.2.2017

Q1. Solve the equation 8x + 7 = x - 35

$-7 \quad -7$

$8x = x - 42$

$-x \quad -x$

$7x = -42$

$x = -6$

Q2. $1\frac{1}{3} \times \frac{2}{5}$

$= \frac{4}{3} \times \frac{2}{5} = \frac{8}{15}$

Q3. Factorise 4x - 16y

$4(x - 4y)$

Q4. Find 17% of 200

17% of 200 = 34

10% of 200 = 20

5% = 20 ÷ 2 = 10

1% = 10 ÷ 5 = 2

Q5. Calculate the speed Mandy is driving at if she travels 120miles in 2 and a half hours $S = \frac{D}{T} = \frac{120}{2.5} = 48$mph

Today we are going to revise over scientific notation.

Scientific Notation

Scientific notation (also known as standard form) is a way of writing very long numbers using the power of 10.

Scientific Notation

When writing numbers in scientific notation, we are writing them so that there is a single non - zero digit in front of the decimal point.

$A \times 10^b$ where $1 \leq A < 10$

(A: greater than or equal to; b: less than)

For numbers greater than 1, $b > 0$. For numbers less than 1, $b < 0$.

Eg. 25 300 000 000

2.53×10^{10}

0.00008406

8.406×10^{-5}

Scientific Notation

Write the following in scientific notation

(a) 48 000 (b) 3 215 000 (c) 0.00325 (d) 0.0009

3.25×10^{-3}

Write the following numbers in normal form (in full)

(e) 5.1×10^3 (f) 2.83×10^{-7} (g) 1.093×10^8

$5.1 \times 10 \times 10 \times 10$

5100

$2.83 \div 10 \div 10 \div 10 \ldots$

0.000000283

Daily Practice 21.2.2017

Q1. Multiply out and simplify 7k + 4(3k - 4) + 2(2k + 2)

$7k + 12k - 16 + 4k + 4$

$23k - 12$

Q2. Josh puts £500 in the bank at the beginning of the year. He receives his money at the end of the year with 5% simple interest added, how much interest does he receive?

10% = 50 ÷ 10 = 50

5% = 50 ÷ 2 = £25

Q3. Share £500 in the ratio 2:3

2 + 3 = 5

100 → £500

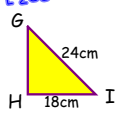
×3 → £300

×2 → £200

Q4. Write 40% as a fraction in its simplest form

$\frac{40}{100} \div 20 = \frac{2}{5}$

Q5. Calculate the length of GH



$x^2 = 24^2 - 18^2$

$x^2 = 576 - 324$

$x^2 = \sqrt{252}$

$x = 15.87$ cm (2dp)

Today we will be continuing to practise questions on scientific notation.

Scientific Notation questions in context

Examples:

1. The area of the surface of the Earth is about 5.095×10^9 square miles. Approximately 29.2% of this is land. How much of the surface area is land?

29.2% of 5.095×10^9

1487740000

$\frac{29.2}{100} \Rightarrow 0.292 \times 5.095 \times 10^9 = 1.48774 \times 10^9$

2. The mass of an oxygen atom is 2.7×10^{-23} grams. The mass of an electron at rest is approx. 30 000 times smaller than this. Calculate the mass of an electron at rest

(2)

A pollen sample weighs 12 grams
and contains 1.5×10^9 pollen grains.

Calculate the weight of **one** pollen grain in grams.
Give your answer in scientific notation. 2

$12 \div (1.5 \times 10^9)$

$= 0.000000008$

$= 8 \times 10^{-9}$

Daily Practice **22.2.2017**

Q1. Round 26.28 to the nearest unit → 26

Q2. There are 3.06×10^{21} atoms in one gram of gold, how many atoms are in 500g of gold? $3.06 \times 10^{24} \times 500$

$= 1.53 \times 10^{24}$

Q3. What is 64.5% written as a decimal? $\div 100 = 0.645$

Q4. Write 30 out of 70 as a percentage $\frac{30}{70} \times 100 = 0.428 \times 100$

$= 42.8\%$ (1dp)

Q5. Multiply out and simplify $5(2x - 1) - 1(x - 3)$

$10x - 5 - x + 3 = 9x - 2$

Q6. What is the value of V if $V = p^2 - 3p$ when $p = -5$?

$V = (-5)^2 - 3(-5)$

$V = 25 + 15 = 40$

Today we will be learning about indices.

Indices

An index (pl. indices) or power represents how many times a number is being multiplied by itself.

a^b is pronounced "a to the power of b"

$4^3 = 4 \times 4 \times 4 = 64$

Examples: Find the value of

(a) 5^3 $= 5 \times 5 \times 5$

$= 125$

(b) 2^5 $= 2 \times 2 \times 2 \times 2 \times 2$

$= 32$

Evaluate:

(a) 7^2 $= 7 \times 7$

$= 49$

(b) 10^8 $= 100\,000\,000$

(c) 3^4 $3 \times 3 \times 3 \times 3$

$= 81$

(d) 5^8

390 625

$3^2 \times 3^3 = 3^5 = 243$

$9 \times 27 = 243$

$7^5 \times 7^p = 7^{15}$

$x^1(x^2+2)$

x^3+2x

Laws of Indices

There are various rules that help you work out problems with indices in them.

1. Multiplying terms with powers

$a^m \times a^b = a^{m+b}$

Examples:

① $k^2 \times k^6 = k^{2+6} = k^8$

② $x^2 \times x^4 \times x^{10} = x^{16}$

③ $m^2 \times m^3 \times m^9 \times m^{-2} = m^{12}$

④ $a^5 \times b^2 \times a^7 \times b^6 = a^{12}b^8$

(a) $m^3 \times m^{-5}$ (b) $x^7 \times x^{-2}$ (c) $p^{-8} \times p^5$ (d) $a^{-3} \times a^{-5}$

(i) $x^3 \times x^5$ (j) $c^2 \times c^9$ (k) $a^2 \times a^{12}$ (l) $y^5 \times y^5$

(m) $b^{10} \times b^{30}$ (n) $p \times p^9$ (o) $d^2 \times d^4$ (p) $q^{11} \times q^9$

(q) $k^7 \times k^2 \times k^{-2} \times k^3$ (r) $k^{11} \times k^{-1} \times k^0 \times k^{11}$

Daily Practice 23.2.2017

Q1. Find the value of a house that was worth £148 000 and appreciated by 4.5%

1% = 148000 ÷ 100 = 1480 0.5% = 1480 ÷ 2 = 740

4% = 1480 × 4 = 5920 4.5% = 6660

148000 + 6660 = £154660

Q2. Multiply out and simplify 2(x - 3) + 4(x + 1)

$2x - 6 + 4x + 4$

$6x - 2$

Q3. Solve $\frac{x+5}{3} = -1$

$\times 3$

$x + 5 = -3$

$-5 \quad -5$

$x = -8$

Q4. $2\frac{1}{5} \div \frac{3}{4}$

$\frac{11}{5} \div \frac{3}{4}$

$\frac{11}{5} \times \frac{4}{3} = \frac{44}{15} = 2\frac{14}{15}$

Q5. Write 0.0000182 in scientific notation

1.82×10^{-5}

Today we will be continuing to learn how to multiply terms with powers.

Multiplying terms with powers

Examples:

1. $3c^2 \times c = 3c^3$

$2c^2 \times 5c^3 = 10c^5$

Multiplying terms with powers

Examples: Multiply the following

2) $2b^2 \times 3b^5$

$= 6b^5$

3) $5a \times 3a^{-5} \times 4a^2$

$= 60a^{-2}$

4) $3ac^2 \times 2a^3$

$= 6a^4c^2$

5) $3b^2(2b^5 + 5)$

$6b^7 + 15b^2$

Daily Practice 27.2.2017

Q1. Calculate the value of a car that was worth £4500 and depreciated by 7% per annum for 2 years.

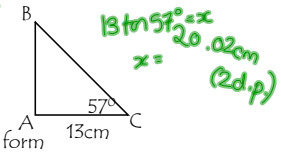
Q2. Solve the equation $\frac{2x-5}{3}=3$

$2x-5=9$ $\times 3$ $\times 3$

$2x=14$

$x=7$

Q3. Calculate the length of AB



$\tan x=\frac{o}{a}$

$\tan 57°=\frac{x}{13}$

$13\tan 57°=x$

$x=20.02\text{cm}$ (2d.p)

Q4. Write 0.0000487 in standard form

4.87×10^{-5}

Multiplying terms with powers

(a) $3a^2\times a^3$ (b) $4m^3\times 2m^5$ (c) $5m^{-3}\times 2m^5$ (d) $7y^{10}\times 4y^2\times 5y^{-3}$

(e) $-2k^2y\times 4y^2$ (f) $10k^2m^3\times 6k^{-3}m^6$ (g) $2m^3\times 7m^{-3}\times 4m^6\times -5$

2. (i) $3a(2a+1)$ (ii) $5a^2(6a^3-2a^{-2})$ (iii) $-4x(2x^2-3x^5)$

(iv) $a^2(2ab^5-a^7)$ (v) $5g^2h^2(4g^{-7}-2h^6)$ (vi) $2k^{-3}(3k^2+5k+8)$

Pg.88 Q1,3,4

Daily Practice 28.2.2017

Q1. Write 14 000 000 in scientific notation

1.4×10^7

Q2. Multiply out and simplify $3k-2(7k-4)$

$=3k-14k+8$

$=-11k+8$

Q3. Simplify $m^2\times 3m\times 7m^3\times 4k$

$=21m^6\times 4k$

$=84m^6k$

Q4. Simplify $\sqrt{128}$

$\sqrt{16}\sqrt{8}$

$4\sqrt{8}$

$4\sqrt{4}\sqrt{2}$

$4\times2\times\sqrt{2}=8\sqrt{2}$

Today we will be learning how to divide indices.

Homework Online due Monday 6.3.2017

$m^6\times m^2=m^6$

$m^8\div m^2=m^6$

$\frac{m^8}{m^2}=m^6$ m^8-m^2

$\frac{m\times m\times m\times m\times m\times m\times m\times m}{m\times m}=m^6$

What would you get if you divided x^5 by x^2 ?

(vi) $(3^2\times 3^3)\div(3^4\times 3^{-1})$

2. Dividing Numbers with powers

$m^a \div m^b = m^{a-b}$

Dividing Numbers with powers

Examples: Simplify the following

1. $7^5 \div 7^3$ $= 7^2$
2. $m^7 \div m^3$ $= m^4$
3. $4m^8 \div 2m^2$ $= 2m^6$
4. $\frac{a^7}{a^3}$ $= a^4$
5. $\frac{12h^2}{2h^{-5}}$ $= 6h^7$

Page 88 Q5. Page 89 Q6.

$\frac{8y^6}{6y^2} = \frac{8y^4}{6} = \frac{4y^4}{3}$

Daily Practice 1.3.2017

20 Questions Mental Maths

Today we will be learning about negative powers.

Homework due Monday.

$\frac{x^2 \times x^3 \times x^4}{x \times x^2} = \frac{x^9}{x^3} = x^6$

$\frac{x \times x^4 \times x^2}{x^8 \times x^4} = \frac{x^7}{x^{12}} = x^{-5}$

$\frac{x \times x \times x \times x \times x \times x \times x}{x \times x \times x \times x \times x \times x \times x \times x \times x \times x \times x \times x} = \frac{1}{x^5}$

Indices

A number with a negative power is the same as 1 over the number with a positive power.

$a^{-b} = \frac{1}{a^b}$

Examples:

(a) $3^{-2} = \frac{1}{3^2} = \frac{1}{9}$ (b) $4^{-3} = \frac{1}{4^3} = \frac{1}{64}$ (c) $a^{-4} = \frac{1}{a^4}$ (d) $3a^{-5} = 3\left(\frac{1}{a^5}\right) = \frac{3}{a^5}$

Evaluate:

① 7^{-2} ② 3^{-5} ③ 4^{-1} ④ 5^{-3} ⑤ 10^{-4}

Write with a positive power

① k^{-2} ② m^{-6} ③ v^{-3} ④ $5k^{-2}$ ⑤ $10a^{-6}$ ⑥ $4q^{-2}$ ⑦ $8z^{-1}$ ⑧ $10p^{-3}$

⑨ Evaluate $4p^{-2}$ when $p=3$

Daily Practice 2.3.2017

Q1. Round 41226 to 3 significant figures 41200

Q2. Multiply out and simplify $2f - 3(f - 4)$

$2f - 3f + 12$

$-f + 12$

Q3. 45.6×500

$456 \times 5 \times 100$

2280×100

228000

Q4. Write 6 000 000 in scientific notation

6×10^6

Q5. Solve $\frac{x-3}{2} = 15$

$x - 3 = 30$

$x = 33$

Today we will be learning how to put a power to a power.

Homework due on Monday.

The power of zero

Any number to the power of zero is one.

$\frac{x^3}{x^3} = x^0 = 1$

$a^0 = 1$

Examples: ① $3m^0 = 3(1) = 3$

② Evaluate $3^1 + 2^0 = \frac{1}{3^1} + 1 = 1\frac{1}{3}$

3. Putting a power to a power

Think about what happens when you write $(2^3)^2$

$(2 \times 2 \times 2)^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 64 = 2^6$

$(a^k)^b = a^{kb}$ $k \times b$

Examples:

(i) $(3^2)^5 = 3^{10}$

(ii) $(p^4)^8 = p^{32}$

(iii) $(4p^2)^3 = 4^3 p^6 = 64p^6$

(iv) $\frac{(p^2 \times 2p \times p^3)^5}{p^7} = \frac{(2p^6)^5}{p^7}$

$= \frac{32p^{30}}{p^7} = 32p^{23}$

Putting a power to a power

Write each of the following in its simplest index form.

(a)	$(3^2)^4$	(b)	$(8^2)^2$	(c)	$(10^3)^2$	(d)	$(2^2)^5$
(e)	$(4^5)^3$	(f)	$(1^7)^2$	(g)	$(12^3)^3$	(h)	$(5^5)^5$
(i)	$(x^4)^2$	(j)	$(y^8)^5$	(k)	$(a^3)^7$	(l)	$(m^4)^4$
(m)	$(b^3)^6$	(n)	$(p^5)^3$	(o)	$(k^5)^{20}$	(p)	$(z^6)^0$

(q) $(3x^2)^2$ (r) $(4b^3)^4$ (s) $(10a^{-2})^5$

From Pegasys booklet

Putting a power to a power

Write each of the following in its simplest index form.

(a)	$(3^2)^4 = 3^8$	(b)	$(8^2)^2 = 8^4$	(c)	$(10^3)^2 = 10^6$	(d)	$(2^2)^5 = 2^{10}$
(e)	$(4^5)^3 = 4^{15}$	(f)	$(1^7)^2 = 1^{14}$	(g)	$(12^3)^3 = 12^9$	(h)	$(5^5)^5 = 5^{25}$
(i)	$(x^4)^2 = x^8$	(j)	$(y^8)^5 = y^{40}$	(k)	$(a^3)^7 = a^{21}$	(l)	$(m^4)^4 = m^{16}$
(m)	$(b^3)^6 = b^{18}$	(n)	$(p^5)^3 = p^{15}$	(o)	$(k^5)^{20} = k^{100}$	(p)	$(z^6)^0 = z^0 = 1$

(q) $(3x^2)^2 = 9x^4$ (r) $(4b^3)^4 = 256b^{12}$ (s) $(10a^{-2})^5 = 100000a^{-10} = \frac{100000}{a^{10}}$

From Pegasys booklet

Daily Practice 6.3.2017

Q1. Write 0.0001706 in scientific notation

Q2. Multiply out and simplify 7y - 2(y + 1) + 3

Q3. Solve the inequation $\frac{3x-1}{4} \leq 5$

Q4. $2\frac{1}{5} \div \frac{15}{8}$

Q5. Calculate the value of a car that was worth £15 000 and depreciated by 2% per annum for 2 years

Today we will be continuing to practise mixed questions on indices.

Homework due!

Daily Practice 7.3.2017

Q1. Calculate $3.1 \times 10^{-6} \times 1500$ and write your answer in standard form to 2 s.f.

Q2. Simplify $\sqrt{250}$

Q3. Write with a rational denominator $\frac{2}{\sqrt{3}}$

Q4. Simplify $\frac{8k^{12} \times 2k}{4k^5}$

Indices HW online due 13.3.2017

Applying the rules of indices to questions From Pegasys booklet

Simplify these expressions.

(a)	$2a^3 \times 5a^5$	(b)	$7x \times 9x^8$	(c)	$12p^7 \div 4p^4$	(d)	$50b^{12} \div 10b^6$
(e)	$3y \times (2y^2)^3$	(f)	$(4q^3)^2 \times 5q^4$	(g)	$(4c^3)^3 \div 8c^2$	(h)	$72z^{12} \div (3z^4)^2$
(i)	$k^2(k^3 + k^5)$	(j)	$m^5(m^2 - m^3)$	(k)	$2x^4(x^3 + 3x^2)$	(l)	$5a^5(2a^2 - 3a^3)$
(m)	$\frac{x^5 \times x^4}{x^6}$	(n)	$\frac{(m^5)^4}{m^6}$	(o)	$\frac{5c^3 \times 4c^7}{2c^6}$	(p)	$\frac{(3q^3)^2 \times 4q^4}{6q^7}$
(q)	$\frac{(3xy^5)^3}{9x^2y}$	(r)	$\frac{(2a^2b^5)^6}{(4ab)^2}$	(s)	$\frac{(4p^4)^3}{2p^3 \times 8p^6}$	(t)	$\frac{(2ab^3)^5}{3a^2b \times 4ab^2}$
(u)	$\frac{x^5 \times 2x^{-3} \times 4x^2}{2x^{-8}}$	(v)	$\frac{15x^{\frac{3}{2}} \times 4x^{-1} \times 2x^{\frac{1}{2}}}{10x^{-1}}$	(w)	$\frac{(5x^{-4} \times 6x^{-1} \times 4x^{10})^3}{4x^2}$		

Applying the rules of indices to questions From Pegasys booklet

Simplify these expressions.

(a)	$2a^3 \times 5a^5$	(b)	$7x \times 9x^8$	(c)	$12p^7 \div 4p^4$	(d)	$50b^{12} \div 10b^6$
(e)	$3y \times (2y^2)^3$	(f)	$(4q^3)^2 \times 5q^4$	(g)	$(4c^3)^3 \div 8c^2$	(h)	$72z^{12} \div (3z^4)^2$
(i)	$k^2(k^3 + k^5)$	(j)	$m^5(m^2 - m^3)$	(k)	$2x^4(x^3 + 3x^2)$	(l)	$5a^5(2a^2 - 3a^3)$
(m)	$\frac{x^5 \times x^4}{x^6}$	(n)	$\frac{(m^5)^4}{m^6}$	(o)	$\frac{5c^3 \times 4c^7}{2c^6}$	(p)	$\frac{(3q^3)^2 \times 4q^4}{6q^7}$
(q)	$\frac{(3xy^5)^3}{9x^2y}$	(r)	$\frac{(2a^2b^5)^6}{(4ab)^2}$	(s)	$\frac{(4p^4)^3}{2p^3 \times 8p^6}$	(t)	$\frac{(2ab^3)^5}{3a^2b \times 4ab^2}$
(u)	$\frac{x^5 \times 2x^{-3} \times 4x^2}{2x^{-8}}$	(v)	$\frac{15x^{\frac{3}{2}} \times 4x^{-1} \times 2x^{\frac{1}{2}}}{10x^{-1}}$	(w)	$\frac{(5x^{-4} \times 6x^{-1} \times 4x^{10})^3}{4x^2}$		

Daily Practice 8.3.2017

Q1. Multiply out and simplify 7(2x - 8) + 15x

Q2. Write 0.0000418 in scientific notation

Q3. Simplify $\sqrt{300}$

Q4. Simplify $\frac{k^2 \times 2k^3 \times 8k}{k^5}$

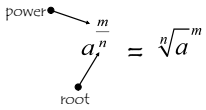
Q5. Write with a rational denominator $\frac{3}{\sqrt{5}}$

Today we will be learning about fractional indices.

Homework due Monday 13.3.2017

Fractional Indices

If a power is a fraction, the denominator is always the root and the numerator is always the power.



$\sqrt[2]{\ } = \sqrt{\ }$

When the root is 2, this just means square root.

Examples:

(i) $z^{\frac{2}{3}} = \sqrt[3]{z^2}$ (ii) $a^{\frac{1}{2}} = \sqrt{a}$ (iii) $a^{\frac{1}{3}} = \sqrt[3]{a}$ (iv) $a^{\frac{5}{7}}$ $\sqrt[7]{a^5}$

(v) $36^{\frac{3}{2}}$ $3\sqrt{6^3}$

(vi) $b^{-\frac{1}{2}} = \frac{1}{b^{\frac{1}{2}}} = \frac{1}{\sqrt{b}}$

(vii) $81^{\frac{3}{2}} = \sqrt{81^3} = 9^3 = 729$

(viii) $27^{\frac{2}{3}}$ $\sqrt[3]{27^2} = 3^2 = 9$

Daily Practice 9.3.2017

Q1. Solve $3(x - 7) = 3$ $3x - 21 = 3$, $3x = 24$, $x = 8$

Q2. Simplify $\sqrt{3} + \sqrt{27} + \sqrt{300}$ $1\sqrt{3} + 3\sqrt{3} + 10\sqrt{3} = 14\sqrt{3}$

Q3. Calculate the volume of a cylinder with radius 4cm and height 7cm

$V = \pi r^2 h$, $V = \pi \times 4^2 \times 7$, $V = \pi \times 16 \times 7$, $V = 351.9\text{cm}^3$ (1dp)

Q4. Simplify $\frac{(2b^2)^3}{4b}$ $\frac{2b^2 \times 2b^2 \times 2b^2}{4b} = \frac{8b^6}{4b} = 2b^5$

Today we will be continuing to practise fractional indices.

$m^{\frac{5}{8}} = \sqrt[8]{m^5}$

$8^{\frac{4}{3}} = \sqrt[3]{8^4} = 2^4 = 16$

Fractional Indices

Evaluate the following:

(a) $16^{\frac{1}{4}} = \sqrt[4]{16^1} = 2$

(b) $4^{\frac{1}{2}} = \sqrt{4^1} = 2$

(c) $36^{\frac{1}{2}} = \sqrt{36^1} = 6$

(d) $8^{\frac{1}{3}} = \sqrt[3]{8^1} = 2$

(e) $9^{\frac{1}{2}} = \sqrt{9^1} = 3$

(f) $100^{\frac{3}{2}} = \sqrt{100^3} = 10^3 = 1000$

(g) $144^{\frac{5}{2}} = \sqrt{144^5} = 12^5 = 248832$

(h) $81^{\frac{5}{4}} = \sqrt[4]{81^5} = 3^5 = 243$

(i) $27^{\frac{1}{3}} = \sqrt[3]{27^1} = 3$

(j) $49^{\frac{3}{2}} = \sqrt{49^3} = 7^3 = 343$

(i) $x^{\frac{1}{2}}$ (ii) $a^{\frac{5}{2}}$ (iii) $b^{\frac{7}{4}}$ (iv) $z^{-\frac{5}{2}} = \frac{1}{z^{\frac{5}{2}}} = \frac{1}{\sqrt{z^5}}$

(v) $q^{\frac{5}{3}}$ (vi) $6m^{\frac{2}{5}}$ (vii) $3t^{-\frac{1}{2}}$

Write the above with roots and powers

Fractional Indices

Evaluate the following:

(a) $16^{\frac{1}{4}} = \sqrt[4]{16} = 2$

(b) $4^{\frac{1}{2}} = \sqrt{4} = 2$

(c) $36^{\frac{1}{2}} = \sqrt{36} = 6$

(d) $8^{\frac{1}{3}} = \sqrt[3]{8} = 2$

(e) $9^{\frac{1}{2}} = \sqrt{9} = 3$

(f) $100^{\frac{3}{2}} = \sqrt{100^3} = 1000$

(g) $144^{\frac{5}{2}} = \sqrt{144^5} = 248832$

(h) $81^{\frac{3}{2}} = \sqrt{81^3} = 729$ (2 d.p.)

(i) $27^{\frac{1}{3}} = \sqrt[3]{27} = 3$

(j) $49^{\frac{3}{2}} = \sqrt{49^3} = 343$

Write these with roots and powers

(i) $x^{\frac{1}{2}} = \sqrt{x}$

(ii) $a^{\frac{5}{2}} = \sqrt{a^5}$

(iii) $b^{\frac{7}{4}} = \sqrt[4]{b^7}$

(iv) $z^{-\frac{5}{2}} = \frac{1}{z^{\frac{5}{2}}} = \frac{1}{\sqrt{z^5}}$

(v) $q^{\frac{5}{3}} = \sqrt[3]{q^5}$

(vi) $6m^{\frac{2}{5}} = 6\sqrt[5]{m^2}$

(vii) $3t^{-\frac{1}{2}} = 3\frac{1}{t^{\frac{1}{2}}} = 3\frac{1}{\sqrt{t}} = \frac{3}{\sqrt{t}}$

$\frac{3}{1} \times \frac{1}{\sqrt{t}}$

Fractional Indices

Rewrite the following so that they have a fractional index

1. $\sqrt{x} = x^{\frac{1}{2}}$
2. $\sqrt[3]{y} = y^{\frac{1}{3}}$
3. $\sqrt[4]{z} = z^{\frac{1}{4}}$
4. $(\sqrt{x})^3 = x^{\frac{3}{2}}$
5. $(\sqrt[4]{x})^4 = x^{\frac{4}{4}}$
6. $\frac{1}{\sqrt{x}} = \frac{1}{x^{\frac{1}{2}}} = x^{-\frac{1}{2}}$
7. $(\sqrt[3]{y})^7 = y^{\frac{7}{3}}$
8. $(\sqrt[4]{z})^3 = z^{\frac{3}{4}}$
9. $(\sqrt[5]{w})^3 = w^{\frac{3}{5}}$

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8. $(\sqrt[4]{z})^3 = z^{\frac{3}{4}}$
9. $(\sqrt[5]{w})^3 = w^{\frac{3}{5}}$

Today we will be completing a check-up on surds and indices.

Daily Practice 13.3.2017

Q1. Write 6,000,000 in scientific notation

6×10^6

Q2. Mutliply out and simplify $18 - 2(x + 5)$

$18 - 2x - 10$

$8 - 2x$

Q3. Simplify $\sqrt{28} + \sqrt{175}$

$\sqrt{4}\sqrt{7} + \sqrt{25}\sqrt{7}$

$2\sqrt{7} + 5\sqrt{7} = 7\sqrt{7}$

Q4. Write with a positive power $3x^{-2}$

$3\left(\frac{1}{x^2}\right) = \frac{3}{x^2}$

Q5. Evaluate 4^{-3}

$= \frac{1}{4^3} = \frac{1}{64}$