

1 BIDMAS



- a) Work out $5 + 3 \times (8 - 2)^2 \div 9$
b) Amir works out $20 - 12 \div 4 + 2$ and gets 4. What did he do wrong? Work out the right answer.

a) $5 + 3 \times 36 \div 9 = 5 + 12 = 17$
b) he worked left to right; $\div$ comes before $+$ and $-$
b) $20 - 3 + 2 = 19$

2 Listing factors



- a) List all the factors of 90.
b) Which whole number below 50 has the most factors?

a) 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90
b) 48 (it has 10 factors)

3 Prime factors



- a) Write 1176 as a product of its prime factors in index form.
b) Use your answer to write 2352 as a product of its prime factors in index form.

a) $2^3 \times 3 \times 7^2$
b) $2352 = 2 \times 1176$
b) $2^4 \times 3 \times 7^2$

4 HCF and LCM



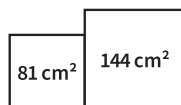
- a) Find the HCF and the LCM of 84 and 120.
b) A board 72 cm by 132 cm is covered with equal squares, with no gaps. Find the largest side the squares can have. How many squares is that?

a) HCF 12, LCM 840
b) HCF of 72 and 132 = 12
b) 12 cm, $6 \times 11 = 66$ squares

5 Squares and square roots



- a) Work out $15^2 - \sqrt{196}$
b) Two squares sit side by side. Work out the perimeter of the shape they make.



a) $225 - 14 = 211$
b) $2 \times 21 + 2 \times 12 = 66$ cm

Number revision mat answers

7 Estimating roots



- a) $\sqrt[3]{50}$ lies between two whole numbers next to each other. Which numbers?
b) Write in order, smallest first.
 $\sqrt{55}$ 7.4 $\sqrt[3]{400}$

a) $27 < 50 < 64$, so 3 and 4
b) $7.4^2 = 54.76$, $7.4^3 = 405.224$
b) $\sqrt[3]{400}$, 7.4, $\sqrt{55}$

8 Index laws



- a) Simplify $4p^3q \times 3p^2q^4$
b) Find the value of n . $\frac{(7^3)^n}{7^2} = 7^{13}$

a) $12p^5q^5$
b) $3n - 2 = 13$
b) $n = 5$

9 Fractional indices



- a) Work out $16^{\frac{3}{4}}$
b) Write $\frac{1}{49}$ and $\sqrt{7}$ as powers of 7.

a) $\sqrt[4]{16} = 2$, $2^3 = 8$
a) 8 b) 7^{-2} , $7^{\frac{1}{2}}$

10 Using a calculator



- Use your calculator for this box.
a) Work out $\frac{\sqrt{12.6^2 - 4.3^2}}{2.8}$ Give your answer to 3 significant figures.
b) Work out $6.4^{-2} + \sqrt[3]{15.625}$ Give your answer to 4 significant figures.

a) $\sqrt{140.27} \div 2.8 = 4.229844...$
b) $0.0244140625 + 2.5$
a) 4.23 b) 2.524