

Revision & Practice Worksheet 2

A Calculators: Rounding off numbers and estimating solutions

Skill 10.1

Estimate solutions to the following to the nearest whole number:

- | | | | | | |
|----|----------------------------------------------------------|----|---------------------------------------------|---|---------------------------------------------|
| 1 | $13.02 + 15.3 \times 1.09$ | 2 | $6.93 \times 7.814 \div 1.99$ | 3 | $17.04 + 3(6.9 - 2.1)$ |
| 4 | $15.09 \times 3.07 + 5.07$ | 5 | $13.98 + 6.97 + 3\frac{1}{4}$ | 6 | $19\frac{3}{4} \times 2\frac{1}{5} + 6.03$ |
| 7 | $\frac{21.04 + 6.81}{3.44}$ | 8 | $\frac{3\frac{1}{5} + 6\frac{1}{4}}{2.987}$ | 9 | $1.97(3\frac{2}{3} + 4\frac{5}{8}) + 16.03$ |
| 10 | $\frac{15.87}{1.9} - \frac{6\frac{1}{4}}{1.897} + 15.69$ | 11 | $(1.89)^2 + 3.09 - 4(3.8 + 2.9)$ | | |
| 12 | $\frac{18.07}{1.89} + 3.01 \times 6\frac{2}{3} - 53.879$ | | | | |

B Number skills: Scientific notation

Skill 1.6

Express the following using scientific notation:

- | | | | | | |
|----|-------------|----|------------|----|-----------------|
| 1 | 80 000 | 2 | 64 012 000 | 3 | 140 000 |
| 4 | 65 000 000 | 5 | 1 600 000 | 6 | 17 800 000 000 |
| 7 | 19 000 | 8 | 278 000 | 9 | 586 000 |
| 10 | 142 100 000 | 11 | 69 000 000 | 12 | 158 000 000 000 |

Write the numbers for these expressions:

- | | | | | | |
|----|------------------------|----|------------------------|----|------------------------|
| 13 | 6.02×10^4 | 14 | 3.098×10^6 | 15 | 6.023×10^{11} |
| 16 | 9.023×10^8 | 17 | 6.01×10^4 | 18 | 3.021×10^{-2} |
| 19 | 1.581×10^{-4} | 20 | 5.021×10^{-6} | 21 | 3.097×10^{-7} |
| 22 | 3.093×10^{-9} | 23 | 4.213×10^{-6} | 24 | 4.093×10^{-4} |

C Number skills: Working with surds

Skill 1.7

Simplify these surds:

- | | | | | | | | |
|---|--------------|----|--------------|----|-------------|----|--------------|
| 1 | $\sqrt{125}$ | 2 | $\sqrt{180}$ | 3 | $\sqrt{18}$ | 4 | $\sqrt{27}$ |
| 5 | $\sqrt{175}$ | 6 | $\sqrt{80}$ | 7 | $\sqrt{63}$ | 8 | $3\sqrt{8}$ |
| 9 | $4\sqrt{27}$ | 10 | $\sqrt{605}$ | 11 | $\sqrt{96}$ | 12 | $\sqrt{343}$ |

Simplify:

- | | | | | | | | |
|----|-------------------------------|----|-------------------------------|----|--------------------------------------|----|-------------------------------|
| 13 | $7\sqrt{2} + 6\sqrt{2}$ | 14 | $5\sqrt{3} - 6\sqrt{3}$ | 15 | $2\sqrt{5} + 6\sqrt{3} - 11\sqrt{5}$ | 16 | $2\sqrt{3} \times 3\sqrt{5}$ |
| 17 | $3\sqrt{2} \times 5\sqrt{3}$ | 18 | $2\sqrt{3} \times \sqrt{3}$ | 19 | $\frac{\sqrt{15}}{\sqrt{3}}$ | 20 | $\frac{\sqrt{24}}{\sqrt{12}}$ |
| 21 | $\frac{6\sqrt{2}}{3\sqrt{2}}$ | 22 | $\frac{7\sqrt{3}}{4\sqrt{6}}$ | 23 | $\frac{3\sqrt{2}}{6\sqrt{10}}$ | 24 | $\frac{5\sqrt{30}}{\sqrt{5}}$ |

D Number applications: Sharing quantities in a given ratio

Skill 2.1

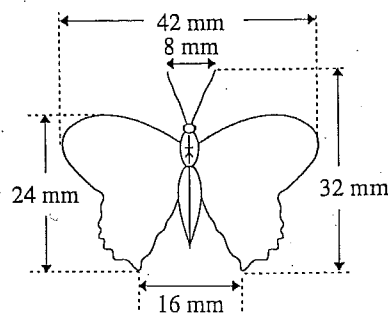
- William, Christopher and Matthew are to share jelly beans in the ratio of their ages. If there are 492 jelly beans and William is 2, Christopher is 6 and Matthew is 4, how many will each receive?
- A lottery win of \$27 is to be shared to the nearest dollar in the ratio of 4:5. How much will each receive?

E Number application: Ratios and scale diagrams

Skill 2.3

Thomas wants to include this butterfly in a wall mural, enlarged in the ratio 1:100.

Express each length marked on the diagram in metres.



Worksheet 2

- A**
- | | | | | | | | |
|---|----|----|----|----|-----|----|-----|
| 1 | 28 | 2 | 28 | 3 | 32 | 4 | 50 |
| 5 | 5 | 6 | 46 | 7 | 7 | 8 | 3 |
| 9 | 34 | 10 | 21 | 11 | -20 | 12 | -24 |
- B**
- | | | | | | |
|----|---------------------|----|----------------------|----|-----------------------|
| 1 | 8×10^4 | 2 | 6.4012×10^7 | 3 | 1.4×10^5 |
| 4 | 6.5×10^7 | 5 | 1.6×10^6 | 6 | 1.78×10^{10} |
| 7 | 1.9×10^4 | 8 | 2.78×10^5 | 9 | 5.86×10^5 |
| 10 | 1.421×10^8 | 11 | 6.9×10^7 | 12 | 1.58×10^{11} |
| 11 | 60 200 | 12 | 3 098 000 | | |
| 13 | 602 300 000 000 | 14 | 902 300 000 | | |
| 15 | 60 100 | 16 | 0.030 21 | | |
| 17 | 0.000 158 1 | 18 | 0.000 005 021 | | |
| 19 | 0.000 000 309 7 | 20 | 0.000 000 003 093 | | |
| 21 | 0.000 004 213 | 22 | 0.000 409 3 | | |

- C**
- | | | | | | | | |
|----|--------------|----|--------------|----|--------------------------|----|-----------------------|
| 1 | $5\sqrt{5}$ | 2 | $6\sqrt{5}$ | 3 | $3\sqrt{2}$ | 4 | $3\sqrt{3}$ |
| 5 | $5\sqrt{7}$ | 6 | $4\sqrt{5}$ | 7 | $3\sqrt{7}$ | 8 | $6\sqrt{2}$ |
| 9 | $12\sqrt{3}$ | 10 | $11\sqrt{5}$ | 11 | $4\sqrt{6}$ | 12 | $7\sqrt{7}$ |
| 11 | $13\sqrt{2}$ | 12 | $-\sqrt{3}$ | 13 | $-9\sqrt{5} + 6\sqrt{3}$ | | |
| 14 | $6\sqrt{15}$ | 15 | $15\sqrt{6}$ | 16 | 6 | 17 | $\sqrt{5}$ |
| 18 | $\sqrt{2}$ | 19 | 2 | 20 | $\frac{7}{4\sqrt{2}}$ | 21 | $\frac{1}{2\sqrt{5}}$ |
| 22 | $5\sqrt{6}$ | | | | | | |

- D**
- William 82, Christopher 246, Matthew 164
 - \$12, \$15

