

Week 4

This week in a nutshell:

The topics this week build on some of the skills developed so far. We have the extension from rounding to estimation and the incorporation of index laws. Again, the other topics are all about representation.

Question 1: Laws of Indices

Question 2: Estimation

Question 3: HCF, LCM

Question 4: Pie Charts

Question 5: Bar Charts

It is worth discussing how prime factors can be used for HCF and LCM, as well as simpler methods. Please also take the time for students to consider the different ways data is presented in pie charts and bar charts, and hence their applicability.

This week's ideas for class discussion include:

Question 1: Laws of Indices

- Do the laws of indices have to be performed in any particular order? Can you explain why?

Question 2: Estimation

- How does the level of initial rounding affect the accuracy of our final answer?
- How could we overcome the problems of loss of accuracy when making an estimate?

Question 3: HCF, LCM

- How do you remember the difference between a factor and a multiple?

Question 4: Pie Charts

- How can pie charts be misleading?

Question 5: Bar Charts

- How can bar charts be misleading?

Week 4: Day 1

1) Simplify (leave your answer in index notation)

a) $7^4 \times 7^2$

b) $5^9 \div 5^4$

2) Estimate

a) $389 + 618$

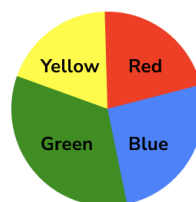
b) 23×41

3) a) Find the highest common factor of **18** and **24**

b) Find the lowest common multiple of **3** and **4**

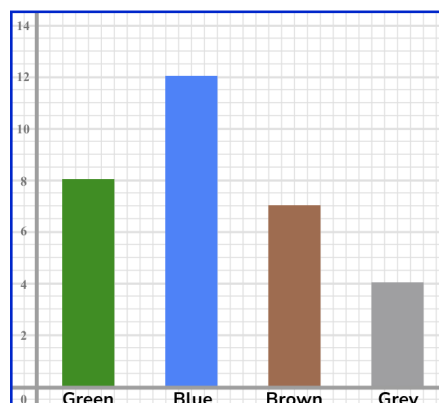
4) From the survey represented by this pie chart, which was the most popular colour?

Favourite Colour



5) The bar chart below shows the results of a class survey. How many students had brown eyes?

Student Eye Colour



Week 4: Day 1 Answers

1) Simplify (leave your answer in index notation)

a) $7^4 \times 7^2 = 7^6$

b) $5^9 \div 5^4 = 5^5$

2) Estimate

a) $389 + 618 = 1000$

b) $23 \times 41 = 800$

3) a) Find the highest common factor of **18** and **24** = **6**

b) Find the lowest common multiple of **3** and **4** = **12**

4) From the survey represented by this pie chart, which was the most popular colour?

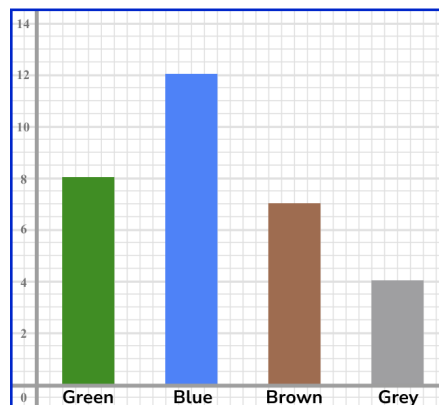
Green

Favourite Colour



5) The bar chart below shows the results of a class survey. How many students had brown eyes? **7**

Student Eye Colour



Week 4: Day 2

1) Simplify (leave your answer in index notation)

a) $a^6 \times a^6 \div a^2$

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

2) Estimate

a) $7.14 - 3.98$

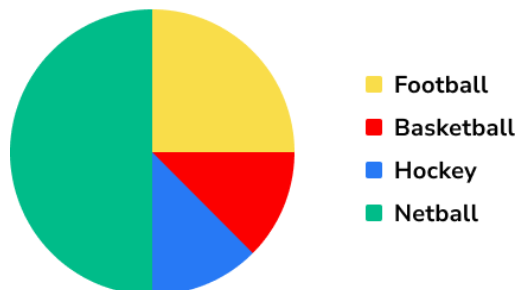
b) $107 \div 19.2$

3) a) Find the highest common factor of **14** and **15**

b) Find the lowest common multiple of **6** and **8**

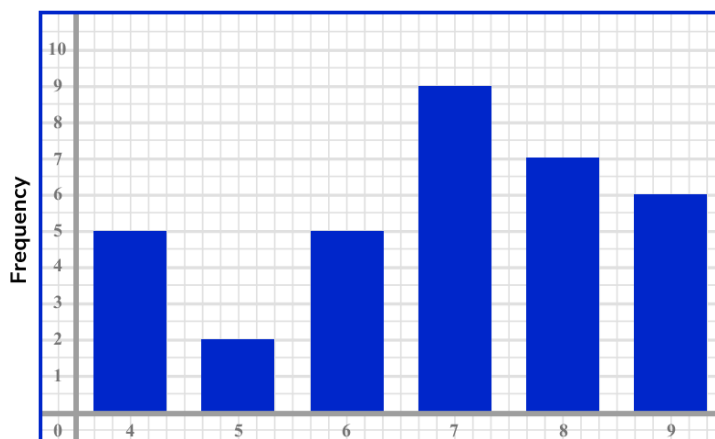
4) In a survey of 24 people about sport, how many were members of a football club?

Sport Club Membership



5) What shoe size is the mode for class 8B?

Class 8B Shoe Sizes



Week 4: Day 2 Answers

1) Simplify (leave your answer in index notation)

a) $a^6 \times a^6 \div a^2 = a^{10}$

b) $3b^2 \times 2c^3 = 6b^2c^3$

2) Estimate

a) $7.14 - 3.98 = 3$

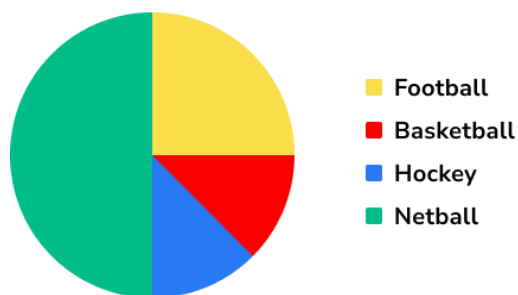
b) $107 \div 19.2 = 5$

3) a) Find the highest common factor of **14** and **15** = **1**

b) Find the lowest common multiple of **6** and **8** = **24**

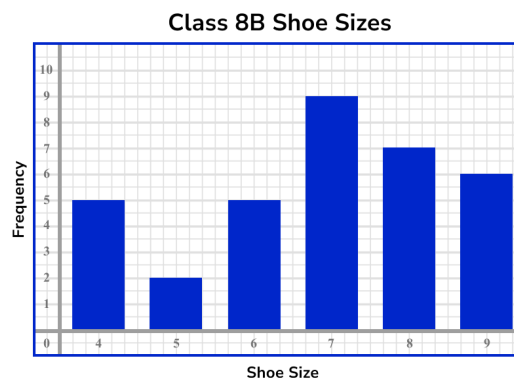
4) In a survey of 24 people about sport, how many were members of a football club? **6**

Sport Club Membership



5) What shoe size is the mode for class 8B?

Size 7



Week 4: Day 3

1) a) Simplify $(x^4)^3$ (leave your answer in index notation)

b) Evaluate 2^{-3}

2) Estimate

a) $1024 \div 16$

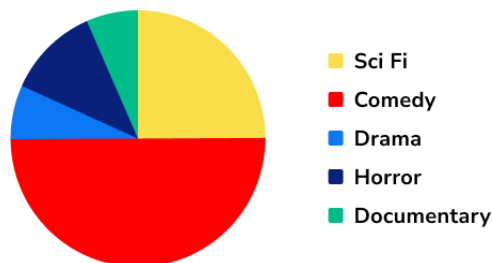
b) $4.75 + 7.11 - 1.86$

3) a) Find the highest common factor of **35** and **42**

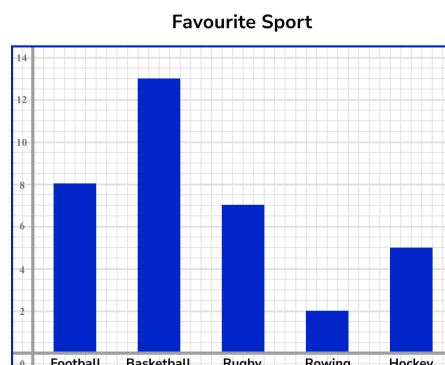
b) Find the lowest common multiple of **14** and **28**

4) In a survey on films, 16 people preferred comedy. How many preferred sci fi?

Film Preference



5) Using the information from the bar chart, how many more people like football than hockey?



Week 4: Day 3 Answers

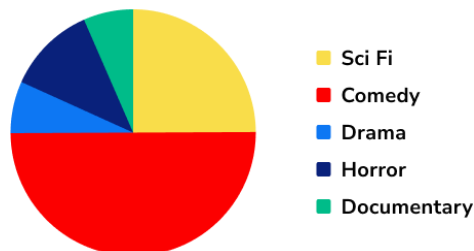
- 1) a) Simplify $(x^4)^3$ (leave your answer in index notation) $= x^{12}$
b) Evaluate $2^{-3} = \frac{1}{8}$

- 2) Estimate
a) $1024 \div 16 = 50$
b) $4.75 + 7.11 - 1.86 = 10$

- 3) a) Find the highest common factor of 35 and 42 $= 7$
b) Find the lowest common multiple of 14 and 28 $= 28$

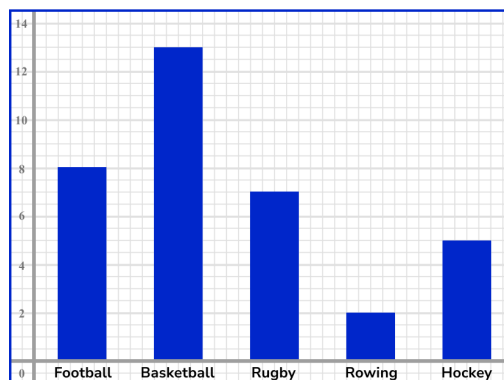
- 4) In a survey on films, 16 people preferred comedy. How many preferred sci fi?
8

Film Preference



- 5) Using the information from the bar chart, how many more people like football than hockey? **3**

Favourite Sport



Week 4: Day 4

1) a) Simplify $(2a^3)^5$

b) Evaluate 16^0

2) Estimate

a) $3.2 \times 4.33 \times 0.51$

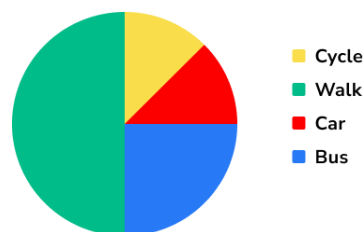
b) $6.8 \times (2.8 + 3.13)$

3) a) Find the highest common factor of **16** and **64**

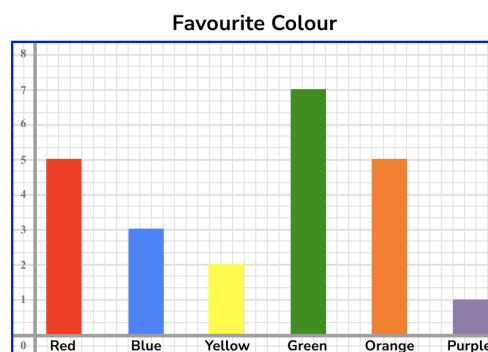
b) Find the lowest common multiple of **4** and **27**

4) The results of a survey of 60 students are shown in a pie chart. How many more students walk than travel by bus?

Transport to school



5) Some students were asked about their favourite colour. How many students were asked in total?



Week 4: Day 4 Answers

- 1) a) Simplify $(2a^3)^5 = 32a^{15}$
b) Evaluate $16^0 = 1$

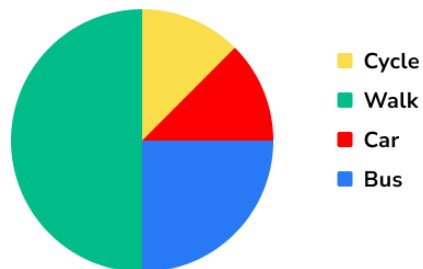
- 2) Estimate

- a) $3.2 \times 4.33 \times 0.51 = 6$
b) $6.8 \times (2.8 + 3.13) = 42$

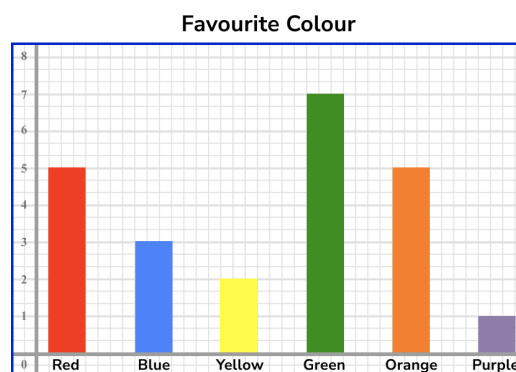
- 3) a) Find the highest common factor of **16** and **64** = **16**
b) Find the lowest common multiple of **4** and **27** = **108**

- 4) The results of a survey of 60 students are shown in a pie chart. How many more students walk than travel by bus? **15**

Transport to school



- 5) Some students were asked about their favourite colour. How many students were asked in total? **23**



Week 4: Day 5

1) a) Simplify $(3y^3)^2 \times 2y^0$

b) Evaluate $(2^3)^2$

2) Estimate

a) $\frac{0.62 \times 51.3}{2.88}$

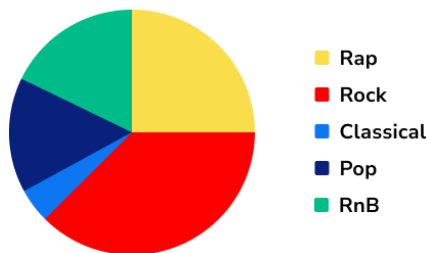
b) $(45.99 - 22.18) \div 5.22$

3) a) Find the highest common factor of **45** and **54**

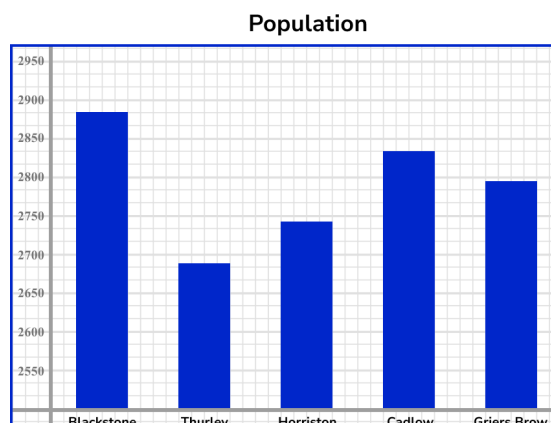
b) Find the lowest common multiple of **8** and **27**

4) In a survey of favourite types of music, 13 people chose rap. How many were surveyed altogether?

Favourite type of music



5) Estimate the difference in population size between Cadlow and Thurley.



Week 4: Day 5 Answers

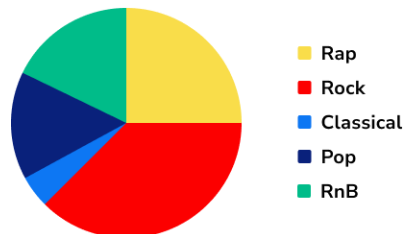
- 1) a) Simplify $(3y^3)^2 \times 2y^0 = 18y^6$
 b) Evaluate $(2^3)^2 = 64$

- 2) Estimate
 a) $\frac{0.62 \times 51.3}{2.88} = 10$
 b) $(45.99 - 22.18) \div 5.22 = 6$

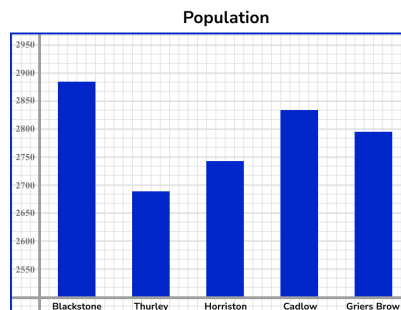
- 3) a) Find the highest common factor of 45 and 54 = 9
 b) Find the lowest common multiple of 8 and 27 = 216

- 4) In a survey of favourite types of music, 13 people chose rap. How many were surveyed altogether? 52

Favourite type of music



- 5) Estimate the difference in population size between Cadlow and Thurley.
 120 - 160



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