

Level 16 Card 1

1. Write in figures:

- a) Seven thousand, eight hundred and fifty-six
- b) Twenty-three thousand two hundred and forty
- c) Sixty-four thousand and fifty
- d) Eighty-three thousand and three

2. Place value

- a) How many ones in 26,975?
- b) Write the highest possible number from these figures: 2, 3, 0, 8, 4
- c) Write the figure that has the greatest values IN this number: 19,786
- d) Make the smallest possible number from these figures: 4, 6, 2, 7, 8

3. Addition

- a) Find the sum of: 39,847 and 28, 958
- b) What is the total of these numbers?
 $56,379 + 568 + 96 + 2,357 + 6 + 5,634$
- c) Fourteen thousand, nine hundred and eighty-six PLUS twenty-seven thousand, eight hundred and sixty-four
- d) What is 65,878 more than 29,863?
- e) $29,786 + 8,695 + 36,589$
- f) 89,456 plus 10,000 =

Level 16 Card 2

1. Doubling and halving

- a) Double 350
- b) Double 245
- c) Halve 682
- d) Halve 900

2. Extended notation

- a) $60,000 = \square \times 10,000$
- b) $60,000 = \square \times 1,000$
- c) $60,000 = \square \times 100$
- d) $60,000 = \square \times 10$

3. Subtraction

a) $596 = 500 + 90 + 6$ (Hint: borrow 10 from the 90)
 $- 279 = 200 + 70 + 8$

b) $763 = 763 + 60 + 3$ (Hint: borrow 10 from the 60)
 $- 248 = 200 + 40 + 8$

Set these out in the same way:

- c) $852 - 328$
- d) $793 - 487$
- e) $486 - 248$
- f) $792 - 575$
- g) $390 - 123$

Level 16 Card 3

1. Add

- a) $7 + 9 = \square$ $17 + 9 = \square$ $97 + 9 = \square$ $897 + 9 = \square$
b) $6 + 8 = \square$ $16 + 8 = \square$ $96 + 8 = \square$ $726 + 8 = \square$
c) $4 + 7 = \square$ $14 + 7 = \square$ $94 + 7 = \square$ $354 + 7 = \square$

2. Subtract

- a) $12 - 7 = \square$ $22 - 7 = \square$ $992 - 7 = \square$
b) $9 - 3 = \square$ $29 - 3 = \square$ $649 - 3 = \square$
c) $11 - 8 = \square$ $21 - 8 = \square$ $561 - 8 = \square$

3. Write in figures which of these is the largest number:

- Fifty-five thousand five hundred and five
- Fifty-five thousand five hundred and fifty
- Fifty-five thousand five hundred and fifteen
- Five thousand and five

4. Which is the second smallest number?

- 88,180
- 88,108
- 88,801
- 88,118
- 88,881
- 88,810

Level 16 Card 4

1. Place value

- a) Write a number of 5 digits where 9 has the value of ninety thousand.
b) $4 \text{ hundreds} + 80,000 + 6 \text{ tens} =$
c) $7 \text{ ones} + 60 \text{ tens} + 2 \text{ ten thousands} =$

2. Multiplication

- | | | | |
|--------|-----|-----|-----|
| a) 643 | 243 | 496 | 528 |
| X 8 | X7 | X6 | x11 |

3. Fractions

Draw 3 rectangles 8 cm long and 1 cm high.

- a) Colour 2 eighths. 2 eighths is the same as \square
b) Colour 6 eighths. 6 eighths is the same as \square
c) Colour 4 eighths. 4 eighths is the same as \square

4. Repeated subtraction is the same as division.

- a) $12 - 4 - 4 - 4 = 0$ so $12 \div 4 = \square$
b) $63 - 9 - 9 - 9 - 9 - 9 - 9 - 9 = 0$ so $63 \div 9 = \square$
c) $35 - 7 - 7 - 7 - 7 - 7 = 0$ so $35 \div 7 = \square$

5. = or \neq

- a) $80 \text{ tens} + 72 \text{ hundreds} + 6 \text{ ones}$ \square $61 \text{ hundreds} + 72 \text{ tens} + 7 \text{ ones}$
b) $17 \text{ hundreds} + 68 \text{ tens} + 7 \text{ ones}$ \square 13 hundreds \square $43 \text{ tens} + 8 \text{ ones}$

Level 16 Card 5

1. Place value

- Write in figures the number that is made up of 9 ones, 3 ten-thousands, 60 tens
- Write in words the number after 99,999
- Write in figures the number that is one more than 39,099
- $74,986 = 70,906 + \square$

2. Real-Life Problems Involving Measures

- Ana has to travel a distance of 20km. She travels 15km on a bus and 3.5km by car. She walks the rest of the way. How far does she have to walk?
- I want to make 12 cakes. If I know that 6kg of flour is enough for 36 cakes, how much flour will I need?
- My car travels 30km for every litre of fuel I put in. A litre of fuel costs \$1.50. How far can I drive for \$12.00?

3. Division with remainders

$$5 \overline{)222}$$

$$8 \overline{)108}$$

$$6 \overline{)69}$$

$$8 \overline{)148}$$

$$5 \overline{)73}$$

$$6 \overline{)177}$$

Level 16 Card 6

1. Place value

- What is the sum of the digits in the number 76,942?
- Write in figures nineteen hundred and sixty-two
- Put these numbers in order: 24,351; 24,349; 24,352; 24,350

2. Real-Life Problems Involving Measures

- When a bucket is full it holds exactly $5 \frac{1}{2}$ litres. A jug holds 500millilitres. How many full jugs of water will I need to fill the bucket?
- Find the cost of 4.5kg of sugar at 50cents per 500g.
- Ben was going to an island. He travelled 150km by car, 50km by bus and 3250km by plane. How far was it from his house?
- The bus arrives at the town centre at 10.30, at the market at 12.00, the library at 14.00 and the museum at 16.05. How long does it take to get from the market to the museum?

3. Money problems

- I had \$10 and spent \$5.50. How much do I have left over?
- David is saving up to buy a bicycle which costs \$100. He earned \$15 from doing jobs and was given \$30 for his birthday. How much more money does he have to save?

Level 16 Card 7

1. Place value

- a) One thousand less than 476,000 =
- b) One hundred more than 29,674 =
- c) The first odd number after 400,000 =
- d) The first even number after 600,000 =
- e) One thousand less than 600,000 =

2. Addition in your head

- a) $45,142 + 200 = \square$
- b) $126,000 + 2000 = \square$
- c) $984 + 100 = \square$

3. Subtraction in your head

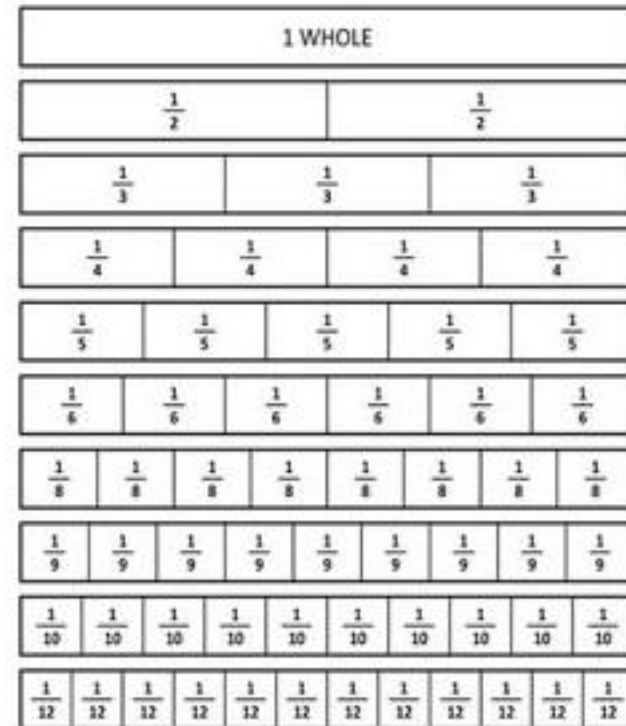
- a) $875 - 50 = \square$
- b) $246 - 7 = \square$
- c) $1,928 - 300 = \square$

4. Practical problems

- a) Peter has saved \$4 in his money box. His Mum gives him \$5 for helping at home. He spends \$7.50. How much does he have left?
- b) Kali wants to buy a pair of shoes that cost \$27. She has \$5.60 in her money box. Then she earns \$15 for baby-sitting. How much more does she need to buy the shoes?
- c) A plank measures 1metre 50centimetres. I cut off two-fifths of the plank. How long is the plank now?
- d) There are 12 pieces of fruit. One quarter are apples and one third are bananas. How many of each type?

Level 16 Card 8

Fractions



Less than $<$ or greater than $>$ or equal $=$

- 1. Five sixths seven eighths
- 2. Five tenths six twelfths
- 3. Two thirds one quarter
- 4. Five eighths three quarters
- 5. Three ninths two fifths

Level 16 Card 9

1. Place value: In the number 47,926 what is the value

- a) of the 6
- b) of the 79
- c) of the 92
- d) of the 47

1. Subtraction

- a) Find the difference between 1,345 and 258
- b) Find the difference between 2,360 and 292
- c) How much bigger is 1,782 than 594
- d) Subtract 154 from 1,220
- e) Subtract 375 from 1,461

2. Division

- a) $35 \div 5 = (30 \div 5) + (5 \div 5) = \square$
- b) $66 \div 6 = (60 \div 6) + (6 \div 6) = \square$
- c) $48 \div 4 = (40 \div 4) + (8 \div 4) = \square$

3. Problem solving

- a) Peter went swimming. Each length of the pool was 50m long. He swam 6 lengths. How many lengths more does he have to swim so that he has swum 500m in total?
- b) I have 10 metres of material. I need to cut lengths of 30 centimetres. How many complete lengths can I cut? How much will be left over?

Level 16 Card 10

1. Place Value

$$\begin{aligned}26,795 &= (2 \times \underline{\quad}) + (79 \times \underline{\quad}) + (7 \times \underline{\quad}) + 9 \times \underline{\quad} + 5 \times \underline{\quad} \\ &= 26 \times \underline{\quad} + 7 \times \underline{\quad} + 5 \times \underline{\quad} \\ &= (267 \times \underline{\quad}) - (9 \times \underline{\quad}) + (5 \times \underline{\quad}) \\ &= 2 \times \underline{\quad} + (679 \times \underline{\quad}) + (5 \times \underline{\quad}) \\ &= (2 \times \underline{\quad}) + (67 \times \underline{\quad}) + (95 \times \underline{\quad})\end{aligned}$$

2. Subtraction

- a) How much smaller is 361 than 1,750
- b) How much smaller is 218 than 1,409?
- c) Decrease 45,000 by 7,000.

3. Addition

- a) 82,709 plus 32,246
- b) 90,000 more than 3,210
- c) Find the sum of 76,498 and 27,397

4. Multiplication

- a) 294×7
- b) 439×8
- c) 796×9

5. Problem solving

- a) My Mum is 46 and my Dad is 48 years old. If I was born in If I was born in 2004, how old will I be next year?
- b) David is 20cm taller than Sanjay. Sanjay is 15cm shorter than Alan. Alan is 1m 15cm tall. How tall is David? How tall is Sanjay?

Level 16 card 11

1. Write in words:

- a) 48,209
- b) 25,027
- c) 189,270

2. Serial addition

- a) $6 + 8 = \square$ $16 + 8 = \square$ $96 + 8 = \square$
- b) $5 + 7 = \square$ $15 + 7 = \square$ $85 + 7 = \square$
- c) $4 + 9 = \square$ $14 + 9 = \square$ $64 + 9 = \square$

3. Serial subtraction

- a) $13 - 7 = \square$ $23 - 7 = \square$ $923 - 7 = \square$
- b) $19 - 11 = \square$ $59 - 11 = \square$ $359 - 11 = \square$
- c) $16 - 8 = \square$ $36 - 8 = \square$ $236 - 8 = \square$

4. Problems solving with money

- a) You have \$7.65. Your friend has \$3.75. How much more do you have than your friend?
- b) You started with \$8.45. You bought a game worth \$5.40. How much money do you have left?
- c) Subtract \$1.65 from \$4.50.

5. Division

$$5 \overline{)179}$$

$$8 \overline{)212}$$

$$6 \overline{)87}$$

$$5 \overline{)86}$$

$$4 \overline{)162}$$

$$8 \overline{)228}$$

Level 16 Card 12

1. Place Value

$$\begin{aligned} 64,379 \\ &= 60,309 + \underline{\quad} \\ &= 4,300 + \underline{\quad} \\ &= \underline{\quad} + 4,070 \\ &= 4,009 + \underline{\quad} \\ &= 60,070 + \underline{\quad} \end{aligned}$$

2. Equations (use BOMDAS)

- a) $56 + (7 - 3) \times 8 =$
- b) $245 - 20 + \frac{1}{2} \text{ of } 32 =$
- c) $\frac{1}{2} \text{ of } 64 \div 8 + 18 =$
- d) $7 \times 9 - 42 =$

3. Problem solving

- a) Dad needed 7m of wood to build some shelves. He already had 125cm of wood. How much more did he need to buy?
- b) If a snail travels 3mm in 5 minutes, how far will it travel in half an hour?
- c) The number 47 bus leaves the bus station at 16.20 and reaches Lami at 16.52. 24 people get on at the bus station. 17 people get off the bus and 8 get on at Lami. How many people will still be on the bus at 16.54?

Level 16 Card 13

Fractions

1. Complete this series: 4, 2, 1, $\frac{1}{2}$ _____ , _____
2. Double $\frac{1}{6}$
3. Halve $\frac{1}{4}$
4. Halve $\frac{1}{3}$
5. Rename 5 by filling in the missing number: $\frac{1}{2}$ of _____
6. Rename 4 by filling in the missing number: $\frac{2}{3}$ of _____
7. $\frac{2}{3}$ of 30
8. $\frac{2}{5}$ of 15
9. Fill in the missing numbers:

$$\frac{2}{3} = \frac{\quad}{6}$$

$$\frac{1}{5} = \frac{\quad}{10}$$

$$\frac{1}{4} = \frac{3}{\quad}$$

$$\frac{3}{4} = \frac{9}{\quad}$$

Decimal fractions

10. Write $\frac{1}{2}$ as a decimal fraction.
11. Write seven tenths as a decimal fraction
12. Write these decimal numbers as fractions:
 - a) .6
 - b) 1.4
 - c) 2.8
13. Subtract \$1.65 from \$4.50
14. \$5.55 + \$2.90 =
15. \$35.45 + \$2.30 + 15 cents =

Level 16 Card 14

Sets

1. What is a set? It is a collection of things. If you can count the number of things in the set it is called a *finite* set. If the number of things in the set are too many to count, it is called an *infinite* set.
Say whether these are finite or infinite sets:
 - a) A carton of eggs
 - b) the stars in the sky
2. The number of things in a set is the *cardinal number*.
For example: A set of pencils has 6 pencils of different colours: red, blue, yellow, green, white and black. Let's call this Set P. In mathematics we can show set P like this:
 $P = \{\text{red, blue, yellow, green, white, red}\}$. It has 5 *elements*. It can also be written as $n(P) = 5$. (**n** stands for **number**. 5 is the *cardinal number*)
 - a) In a basket there are 6 pieces of fruit: 2 apples, 1 banana, 3 mangoes. Write this in two ways:
 $F = \{2, _, _ \}$ or $n(F) = \square$
 - b) In a set of plastic animals there are 2 sheep, 3 dogs, 1 cat and 4 ducks. Write this in 2 ways:
 $A = \{ _, _, _, _, _ \}$ or $n(A) = \square$
 - c) In a set of clothes there are 2 socks, 3 shirts, 1 shorts and 1 jacket. Write this in 2 ways:
 $C = \{ _, _, _, _, _ \}$ or $n(C) = \square$
 - d) In a kitchen set there are 2 pans, 3 bowls and 2 knives. What is the *cardinal number*?

Level 16 Card 15

1. Subtraction

a) \$862.15 b) 62415 c) 90346 d) 60000

- \$348.02 - 5 658 - 2 918 - 16 742

2. Problem solving

a) The price of a television is \$1125 and a DVD player is \$456. How much does Mrs Manoa have to pay if she has already paid \$175 deposit?

b) Mrs. Prasad is 4 years younger than her husband. Her husband is 46 years old and Sam is 6 years younger than Mrs. Prasad. How old is Sam?

c) John is tall. Paul is taller but Ken is the tallest. Who is the shortest? Who is the tallest?

d) Jone's house is big, Freddy's house is two times bigger than Jone's and Romu's house is two times bigger than Freddy's. Who has the smallest house?

3. Continue the pattern.

a) 3, 7, 11, 15...

b) 5, 11, 17, 23...

c) 15, 30, 45, 60...

d) 2, 20, 38, 56...

Level 16 Card 16

1. Measurement Facts

10 millimetres = 1 centimetre 1000 millimetres = 1 metre

100 centimetres = 1 metre 1000 metres = 1 kilometre

a) 3 cm = □ mm b) 7 m = □ cm c) 4000 m = □ km

d) 5 km = □ m e) 70 mm = □ cm f) 9 km = □ m

g) 600 cm = □ m h) 3 m = □ mm i) 1 000 mm = □ m

2. Order these units of lengths from shortest to longest.

19cm 9m 250mm 20cm

3m 290cm 310 cm 2950mm

4000mm 401 cm 350cm 4000cm

3. Measure the length of each line to the nearest centimetre then millimetre.

a) _____

b) _____

c) _____

d) _____

e) _____

Level 16 Card 17

1. Associative law means that the numbers on both sides of the equation stay the same and the equation is still true. Examples:

(i) $3 + (9+4) = (4 + 9) + 3$

(ii) $7 \times (2 \times 3) = (7 \times 2) \times 3$

Now complete these equations using the Associative law.

a) $6 + (8 + 9) = (\square + \square) + \square$

b) $4 \times (3 \times 4) =$

c) $10 + (20 + 9) =$

d) $9 \times (5 \times 2) =$

e) $10 \times (3 \times 4) =$

f) $19 + (10 + 15) =$

2. Distributive law

Example: $3 \times (2 + 4) = 3 \times 2 + 3 \times 4 = 18$

You multiply everything inside the brackets by the 3 at the beginning of the equation.

Now try these:

a) $7 \times (6 + 2) = \square \times \square + \square + \square = \square$

b) $5 \times (4 + 9) = \square \times \square + \square + \square = \square$

c) $4 \times (8 + 2) = \square \times \square + \square + \square = \square$

d) $8 \times (9 + 1) = \square \times \square + \square + \square = \square$

e) $3 \times (6 + 6) = \square \times \square + \square + \square = \square$

f) $9 \times (4 + 3) = \square \times \square + \square + \square = \square$

Level 16 Card 18 (Test)

1. Write in words: 64,206

2. Write in figures: ninety thousand, one hundred and seven

3. What is the sum of 98,246, 3,792, 564 and 8?

4. $48,927 + 64,329 = \square$

5. Double 425.

6. Halve 942.

7. Subtract 468 from 840.

8. Find the difference between 935 and 328.

9. $8 - 4 = \square$ $28 - 4 = \square$ $548 - 4 = \square$

10. $85,421 = 80,401 + \square$

11. $98,410 + 220 = \square$

12. In the number 52,614, what is the value of:

a) The 5? b) the 2? c) the 6? d) the 4? ($\frac{1}{2}$ mark each)

13. $8 \overline{)228}$

14. 742×7

15. $429 + 17 + \frac{1}{2}$ of 48 = \square (Use BOMDAS)

16. $\$6.45 + \$18.40 - \$3.60$

17. $\frac{2}{3}$ of 66 = \square

18. Half of $\frac{1}{2} = \square$

19. Write $\frac{5}{10}$ as a decimal fraction.

20. I had \$50.65 and spent \$3.40. How much do I have left?

Level 17 Card 1

1. Write the number that is:

- a) 2 less than 1 million
- b) 40 less than 1 million
- c) 100 less than 1 million

2. Addition

- a) $100,000 + 40,000 + 700 + 59 = \square$
- b) $500,000 + 72,000 + 367 = \square$
- c) $270,000 + 10,000 + 210 + 5 = \square$

3. Equal or not equal (= or \neq) Use BOMDAS

- a) $16 \times (18 \div 9) \square (18 \div 9) \times 16$
- b) $67 + (45 \times 0) \square (67)$
- c) $29 + 30 - (\frac{1}{5} \text{ of } 35) \square 7 \times 6 + 15$

4. Fractions

- a) If $\frac{1}{2}$ of 24 = \square then $\frac{1}{2}$ of 48 = \square
- b) If $\frac{1}{5}$ of 30 = \square then $\frac{1}{5}$ of 60 = \square
- c) If $\frac{1}{3}$ of 60 = \square then $\frac{1}{3}$ of 120 = \square
- d) If $\frac{1}{6}$ of 42 = \square then $\frac{2}{6}$ of 42 = \square
- e) If $\frac{1}{8}$ of 64 = \square then $\frac{3}{8}$ of 64 = \square
- f) If $\frac{1}{8}$ of 96 = \square then $\frac{7}{8}$ of 96 = \square

5. Subtraction

- a) Find the difference between 901 and 400,000.
- b) Find the difference between 50,050 and 55,015.
- c) How much less than 85,047 is 75,958?
- d) How much more than four thousand and fourteen is fifty thousand?
- e) What must I add to 79,643 to get 89,248?

Level 17 Card 2

1. Write in figures:

- a) Two hundred and forty-eight thousand and nine
- b) Seven hundred thousand and seven
- c) Nine hundred and ninety-nine thousand and fifty-six
- d) One million and one

2. Use brackets to make this equation true: (Try the two options for the brackets and see which one works!)

- a) $27 \div 9 \div 3 = 9$
- b) $64 \div 8 \div 2 = 4$
- c) $63 \div 21 \div 3 = 9$
- d) $40 \div 5 \div 2 = 4$
- e) $48 \div 42 \div 7 = 8$

3. More equations (Use BOMDAS)

- a) $9 \times (9 - 5) \div 6 = 3 + \square$
- b) $7 \times 3 \times 2 + 5 \div 5 = \square$
- c) $150 - 51 + 27 \div 9 = \square$
- d) $9 \times 6 + 200 - 9 = \square$
- e) $600 - 40 + 56 \div 8 = \square$
- f) $\frac{1}{2} \text{ of } (7 \times 6) + 120 = \square$

4. Adding 9

- a) If $368 + 10 = \square$ then $368 + 9 = \square$
- b) If $1,427 + 10 = \square$ then $1,427 + 9 = \square$
- c) If $8,093 + 10 = \square$ then $8,093 + 9 = \square$
- d) If $20,645 + 10 = \square$ then $20,645 + 9 = \square$
- e) If $899,204 + 10 = \square$ then $899,204 + 9 = \square$
- f) If $900,300 + 10 = \square$ then $900,300 + 9 = \square$

Level 17 Card 3

1. Finish the counting:

- a) 2,937 2,941 2,9452,965
- b) 27,195 27,09526,695
- c) 201,000 201,025201,150

2. = or ≠

- a) $46 + 37 - 54$ □ $54 - 37 + 46$
- b) $98 + 21 - 14$ □ $98 + 31 - 4$
- c) $49 \div 7 + 15$ □ $7 \times 7 + 15$

3. Work out the brackets first:

- a) $9 + (5 + 2) =$
- b) $(5 \times 4) \times 2 =$
- c) $(9 + 5) + 2 =$
- d) $5 \times (4 \times 2) =$
- e) $12 + (5 - 3) =$
- f) $10 \times (9 \div 3) =$
- g) $(12 + 5) - 3 =$
- h) $(10 \times 9) \div 3 =$

4. Put the brackets in the right place to make the equation true.

- a) $8 - 6 \times 3 = 6$
- b) $10 - 8 - 4 = 6$
- c) $15 \times 12 \div 3 = 60$
- d) $6 + 4 \div 2 + 2 = 7$
- e) $24 - 12 \times 2 = 0$
- f) $3 \times 8 - 6 = 6$
- g) $36 + 45 \div 9 = 9$

Level 17 Card 4

1. Continue the pattern

- a) $2 + 3 = \square$ $20 + 30 = \square$ $200 + 300 = \square$ $2000 + 3000 =$
- b) $5 + 4 = \square$ $5000 + 4000 =$
- c) $6 + 3 = \square$ $6000 + 3000 =$

2. Multiplication

194	246	321	429	763	444
X 3	X 7	X 8	X 9	X 6	X 4

3. Addition with money (Set out - decimal points underneath each other.)

- a) $\$48.35 + \69.55
- b) $\$127.20 + 362.80$
- c) $\$63.40 + 297.60$
- d) $\$378.00 + 60$ cents
- e) 70 cents + 90 cents + $\$2.20$

4. Division patterns

- a) $8 \div 8 = \square$ $80 \div 8 = \square$ $800 \div 8 = \square$ $8000 \div 8 = \square$
- b) $36 \div 9 = \square$ $360 \div 9 = \square$ $3600 \div 9 = \square$
- c) $18 \div 3 = \square$ $180 \div 3 = \square$ $1800 \div 3 = \square$

5. Subtraction

Set these out like the example shown.

- a) $82 - 54 =$
- b) $128 - 76 =$
- c) $642 - 127 =$
- d) $365 - 177 =$

$$\begin{array}{r} 3 \quad 1 \\ 44 \\ - 29 \\ \hline 15 \end{array}$$

Level 17 Card 5

1. **Write each of these numbers in figures.** The first one is done for you.

- a. five thousand and one = 5,001
- b. Thirteen thousand and seventy =
- c. Ten thousand, six hundred and eighteen =
- d. Twenty-two thousand, five hundred and ninety-three

2. **State the place value of each underlined digit.**

- a) 596 b) 9,234 c) 3 706
- d) 14,007 e) 49 f) 56,583

3. **Rounding numbers the nearest ten**, e.g. 37 and 32

Ask: "What is the next ten above 30? What is half way in-between 30 and 40? (35). Ask, "Is 37 above 35? Yes!" So, round it to 40. For 32, ask, "Is the 32 above 35? No! So, round it to 30. Now round these to the nearest ten:

- a) 56 b) 24 c) 39 d) 88 e) 71 f) 44

4. **Subtraction**

- a) 607 is \square less than 34,204.
- b) 35,216 is \square more than 25,608.
- c) What must I subtract from 25,000 to get 15,050?
- d) By how much does 99,019 exceed 13,030?
- e) By how much does 99,019 exceed 13.030?

Level 17 Card 6

1. **Write each of these numbers in words.**

- a) 6,107
- b) 82,372
- c) 65,009
- d) 38,412

2. **Factors**

Factors are the numbers you multiply together to get another number. e.g. Factors of 8:

$1 \times 8 = 8$; $2 \times 4 = 8$ so the factors are 1, 8, 2 and 4

Try these:

- a) Factors of 16 =
- b) Factors of 32 =
- c) Factors of 45 =
- d) Factors of 12 =

3. **Prime Numbers & Composite Numbers**

Prime numbers are numbers that have only two factors. e.g. What are the factors of 3? There are **only** two factors

$1 \times 3 = 3$

Composite numbers are numbers that have more than two factors, (like the ones in Number 2 above). Say whether these are Prime numbers or Composite numbers

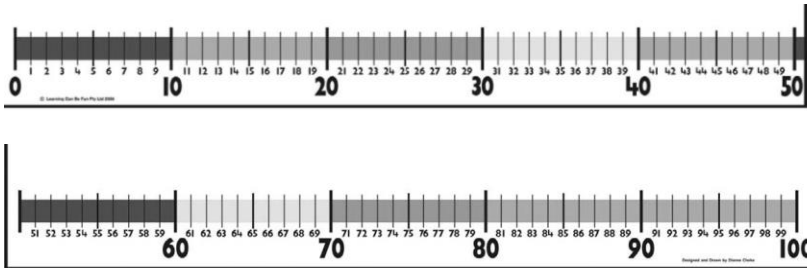
- a)5 b)27 c)36 d)19 e)40 f)41 g)18

Level 17 Card 7

1. The number is 38,120.

- Make four numbers that have five digits.
- Arrange the numbers in ascending order.
- Arrange the numbers in descending order.

2. Rounding numbers to the nearest ten



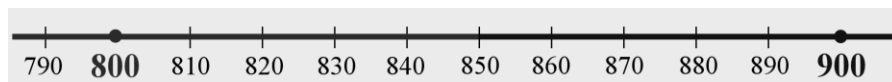
Use the number line to round these numbers:

- a) 37 b) 28 c) 7 d) 42 e) 64 f) 76 g) 57 h) 94 i) 82

3. Rounding numbers the nearest hundred, e.g. 867 and 834

Ask: "What is the next hundred above 800? What is half way in-between 800 and 900? (250). Ask, "Is 867 above 850? Yes!" So, round it to 900. For 834, ask, "Is the 834 above 850? No! So, round it to 800. Now round these to the nearest hundred.

- a) 857 b) 564 c) 289 d) 342 e) 790 f) 981 g) 423



Level 17 Card 8

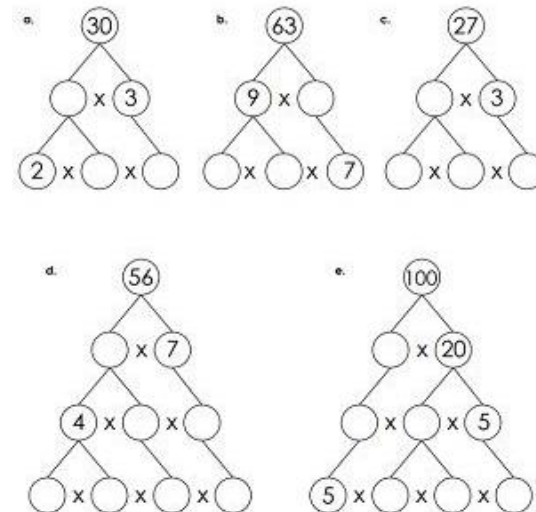
1. Ordering numbers

The table below shows the diameter of the planets in the solar system, in km.

Mercury 4,879	Venus 2,104	Earth 12,756	Mars 6,805
Jupiter 142,984	Saturn 120,536	Uranus 51,118	Neptune 49,528

- Which planet has the largest diameter?
- Which planet has the smallest diameter?
- Name the four planets with the smallest diameters.
- Arrange the diameters of these planets in ascending order (smallest to largest).

2. Factor trees. Copy these and complete them.



Level 17 Card 9

1. **Equations.** Use brackets where necessary to make these equations true.

- a) $12 - 8 - 4 = 8$
- b) $32 \div 8 \div 2 = 8$
- c) $17 - 8 - 3 = 6$
- d) $35 + 17 + 41 = 93$
- e) $27 \times 9 \div 9 = 27$

2. **Addition using rounding**

- a) $7156 + 97$
 $= 7156 + 100$
 $= 7256 - 3$ (because 97 is 3 less than 100) = \square
- b) $5674 + 89$
 $= 5674 + 100$
 $= \square - \square$ (because 89 is \square less than 100 = \square)

3. **Addition**

- a) 5284 b) 4618 c) 3219 d) 8078 e) $\$56.74$
 $+ 2963$ $+ 3812$ $+ 2537$ $+ 5951$ $+ \$63.84$

4. **Problem Solving**

Mr. Tava bought a new car for \$19,990. He also bought air conditioning for \$1,350 and a TV for \$850. How much did he spend?

Level 17 Card 10

Decimal Equivalents for Tenths and Hundredths

0.1	$\frac{1}{10}$	0.03	$\frac{3}{100}$
0.5	$\frac{5}{10}$	0.08	$\frac{8}{100}$

0.44

$\frac{44}{100}$

0.58

$\frac{58}{100}$

1. Draw a Place Value chart like the one below one and write the numbers in the right columns for:

- a) 34.75 b) 156.07 c) 0.75

hundreds	tens	ones		tenths	hundredths
			.		
			.		
			.		

2. Count by tenths

- a) 6.8, _____, 8
- b) 7.64, _____, 7.84
- c) 27.3, _____, 28.4

3. Count by hundredths

- a) 0.89, _____, 1
- b) 14.88, _____, 14.99

Level 17 Card 11

1. Addition

$$\begin{array}{r} \text{a) } \$327.81 \\ + \$146.25 \\ \hline \end{array} \quad \begin{array}{r} \text{b) } 83175 \\ + 9\ 654 \\ \hline \end{array} \quad \begin{array}{r} \text{c) } 75263 \\ + 7491 \\ \hline \end{array} \quad \begin{array}{r} \text{d) } 63\ 520 \\ + 10\ 692 \\ \hline \end{array} \quad \begin{array}{r} \text{e) } 49\ 785 \\ + 23\ 283 \\ \hline \end{array}$$

2. Addition Problem Solving

- a) At Marau Primary School there are 324 girls on the school roll and 289 boys. How many children attend the school?
- b) In a relay, Terry ran 2 195m, Susana ran 1 983 m, Lupe ran 2 035m and Veena ran 1 907m. How long was the relay?
- c) A soap factory made 26 680 bars of soap in October and 14 525 bars of soap in November. How many bars of soap did the factory make altogether?

3. Subtraction

$$\begin{array}{r} \text{a) } 5735 \\ - 2168 \\ \hline \end{array} \quad \begin{array}{r} \text{b) } 3406 \\ - 1\ 658 \\ \hline \end{array} \quad \begin{array}{r} \text{c) } \$97.82 \\ - 35.97 \\ \hline \end{array} \quad \begin{array}{r} \text{d) } 3284 \\ - 1537 \\ \hline \end{array}$$

3. Subtraction Problem Solving

Seven thousand, four hundred and thirty-five people attended athletics meeting. If 4,650 were adults, how many children attended?

Level 17 Card 12

1. Multiplying ones by tens

Example: $4 \times 3 = 12$ $4 \times 30 = 120$ (add zero)

$$\begin{array}{lll} \text{a. } 4 \times 40 = \underline{\quad} & \text{b. } 7 \times 20 = \underline{\quad} & \text{c. } 5 \times 90 = \underline{\quad} \\ \text{d. } 6 \times 80 = \underline{\quad} & \text{e. } 3 \times 70 = \underline{\quad} & \text{f. } 8 \times 80 = \underline{\quad} \\ \text{g. } 9 \times 20 = \underline{\quad} & \text{h. } 6 \times 40 = \underline{\quad} & \text{i. } 2 \times 80 = \underline{\quad} \end{array}$$

2. Multiplying tens by tens

Example: $4 \times 6 = 24$ $40 \times 60 = 2400$ (add 2 zeros)

$$\begin{array}{lll} \text{a) } 60 \times 40 = & \text{b) } 80 \times 50 = & \text{c) } 30 \times 40 = \\ \text{d) } 2 \times 60 = & \text{e) } 80 \times 40 = & \text{f) } 60 \times 70 = \\ \text{g) } 70 \times 50 = & \text{h) } 90 \times 20 = & \text{i) } 30 \times 70 = \end{array}$$

3. Problem solving

- a) Each day Farmer Jale gives his pigs 56 kilograms of pig feed. How much pig feed do his pigs eat in a week?
- b) A dozen doughnuts cost \$5.95. How much do six dozen doughnuts cost?
- c) 609 people attended a music concert. If they all paid \$8 each, how much money was collected?
- d) Mrs Ali has 7 bank accounts with \$367 in each account. How much does she have altogether?

4. Write this number:

$$3 \times 10 + 5 \times 1000 + 4 \times 1 + 7 \times 10,000 =$$

Level 17 Card 13

1. Write division facts that can be made into multiplication facts.

e.g. $5 \times 7 = 35$ $35 \div 7 = 5$ or $35 \div 5 = 7$

a) $5 \times 6 = \square$ $\square \div \square = \square$ or $\square \div \square = \square$

b) $6 \times 8 = \square$ $\square \div \square = \square$ or $\square \div \square = \square$

c) $4 \times 9 = \square$ $\square \div \square = \square$ or $\square \div \square = \square$

d) $8 \times 7 = \square$ $\square \div \square = \square$ or $\square \div \square = \square$

2. Division with remainders

a) $16 \div 5 = \underline{3} \text{ r } \underline{1}$ b) $37 \div 7 = \underline{\quad} \text{ r } \underline{\quad}$

c) $47 \div 6 = \underline{\quad} \text{ r } \underline{\quad}$ d) $83 \div 9 = \underline{\quad} \text{ r } \underline{\quad}$

e) $26 \div 8 = \underline{\quad} \text{ r } \underline{\quad}$ f) $51 \div 6 = \underline{\quad} \text{ r } \underline{\quad}$

g) $16 \div 7 = \underline{\quad} \text{ r } \underline{\quad}$ h) $14 \div 4 = \underline{\quad} \text{ r } \underline{\quad}$

3. Problem solving

a) 3,600ml of water was poured into 8 jugs of equal size. How much water is there in each jug?

b) 5,782 km of road is divided into 7 equal sections. What is the length of each section?

c). 2,700 kilograms of iron is to be placed equally into 6 containers on a ship. How many kilograms will be in each container?

Level 17 Card 14

1. Order these fractions from lowest to highest:

Use a fractions mat $\frac{1}{6}$ $\frac{1}{3}$ $\frac{1}{8}$ $\frac{5}{6}$ $\frac{4}{5}$

(See Level 16 Card 8)

2. Fractions: Mixed numbers

Change these mixed numbers to improper fractions:

1) $5\frac{1}{3} = \underline{\quad}$ 6) $2\frac{1}{2} = \underline{\quad}$ 11) $9\frac{1}{5} = \underline{\quad}$

2) $2\frac{1}{8} = \underline{\quad}$ 7) $3\frac{1}{4} = \underline{\quad}$ 12) $6\frac{1}{2} = \underline{\quad}$

3) $3\frac{1}{4} = \underline{\quad}$ 8) $6\frac{1}{10} = \underline{\quad}$ 13) $5\frac{4}{9} = \underline{\quad}$

4) $3\frac{2}{9} = \underline{\quad}$ 9) $5\frac{7}{10} = \underline{\quad}$ 14) $9\frac{2}{3} = \underline{\quad}$

5) $9\frac{3}{8} = \underline{\quad}$ 10) $9\frac{1}{2} = \underline{\quad}$ 15) $2\frac{3}{8} = \underline{\quad}$

3. Change these improper fractions to mixed numbers.

1) $\frac{9}{4} = \underline{\quad}$ 6) $\frac{11}{5} = \underline{\quad}$ 11) $\frac{71}{10} = \underline{\quad}$

2) $\frac{82}{9} = \underline{\quad}$ 7) $\frac{61}{6} = \underline{\quad}$ 12) $\frac{29}{7} = \underline{\quad}$

3) $\frac{31}{5} = \underline{\quad}$ 8) $\frac{7}{3} = \underline{\quad}$ 13) $\frac{55}{6} = \underline{\quad}$

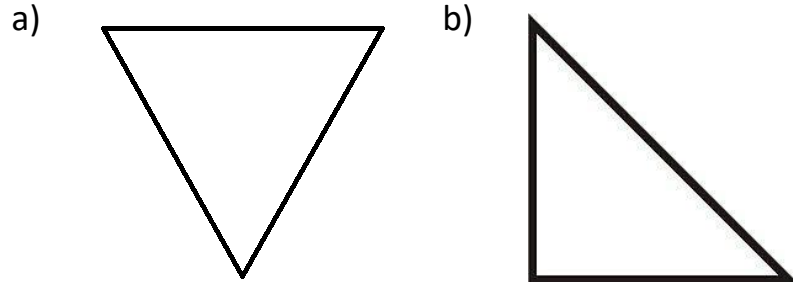
4) $\frac{13}{3} = \underline{\quad}$ 9) $\frac{50}{7} = \underline{\quad}$ 14) $\frac{21}{10} = \underline{\quad}$

5) $\frac{29}{7} = \underline{\quad}$ 10) $\frac{17}{4} = \underline{\quad}$ 15) $\frac{25}{4} = \underline{\quad}$

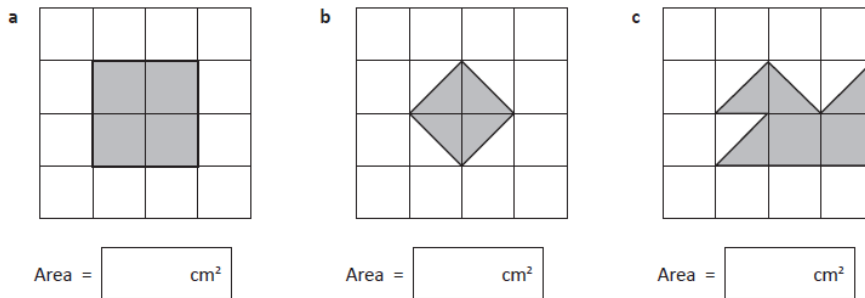
Level 17 Card 15

Measurement: Perimeter and Area

1. Measure and record the perimeter of each triangle



2. What is the area of each shape? Each square has an area of 1 cm^2 .



3. Problem solving

- a) The area of a bookmark is 20 square centimetres. The bookmark is 2 centimetres wide. How long is it? (Draw this.)
- b) A rectangular school yard is 178m long and 100m wide. Find its area.

Level 17 Card 16

1. Identify the pattern and write the next four numbers.

- a) 3, 6, 5, 10, 9, __, __, __, __
- b) 3, 6, 12, 24, __, __, __, __
- c) 3, 4, 8, 9, 18, 19, __, __, __, __
- d) 7, 5, 15, 13, 39, __, __, __, __
- e) 10, 9, 90, 89, 890, __, __, __, __

2. Perimeter and Area problems

- a) Mrs. Mani wants new carpeting for her living room. Her living room is an 8 m long and 8 m wide rectangle. How much carpeting does she need to buy to cover her entire living room?
- b) Mr. Kameli made a rectangular flower garden that is 10 m long and 2 m wide. One bag of soil can cover 100 cm^2 . How many bags will he need to cover the entire garden?

3. Measurement: Volume and Capacity

$$1000 \text{ millilitres} = 1 \text{ litre} \quad (1000 \text{ ml} = 1 \text{ L})$$

- a) litres = 2 000 millilitres e) millilitres = 4 litres
- b) litres = 500 millilitres f) millilitres = $\frac{3}{4}$ litre
- c) litres = 7 500 millilitres g) millilitres = 12 litres
- d) litres = 250 millilitres h) millilitres = $2 \frac{1}{4}$ litres

Level 17 Card 17

Estimating Capacity

- If a flask holds 50ml of water when full, how many flasks would be needed to fill:
 - a 500 ml water bottle?
 - 375 ml can?
 - 1 litre milk container?
 - 250 ml mug?
- What products are sold in containers holding the following quantities?
 - less than 100 ml
 - 100 ml to 500 ml
 - 500 ml to 1 000 ml
 - more than 1 L
- Which measurement is most likely?
 - A can of juice is most likely to hold 350 ml or 350L?
 - Mr. Bale was painting his kitchen. Did he most likely buy 10L or 10 ml of paint?
 - A wheelbarrow would most likely hold 170 ml or 170L of water?
- A jug holds 2 litres. How many of these could it fill?
 - Cups that hold 250 ml?
 - Bottles that hold 100 ml?
 - Bowls that hold 400 ml?

Level 17 Card 18 Test

(Score out of 20)

- Write in figures:** Three hundred and fifty-two thousand and eight
- $400,000 + 32,000 + 478 = \square$
- Equal or not equal (= or \neq) Use BOMDAS**
 $16 \times (14 \div 7) \square (14 \div 7) \times 16$
- $9 \times (9 - 5) \div 6 = 3 + \square$
- Use brackets to make the equation true.** $8 - 6 \times 3 = 6$
- Set this out with numbers underneath each other:
 $482 - 354 =$
- Find the difference between 1,051 and 5,036.
- List all the factors of 12, e.g. $1 \times 12 = 12$ (3 marks)
- Round 865 to the nearest hundred.
- Multiplication:** 194
X 5
- Count by tenths**
6.8, , , , , , , , , , , 8
- In one year, a toy factory made 36,680 toy cars, 7,000 toy dinosaurs and 25,279 dolls. How many toys did the factory make altogether?
- $46 \div 7 = \square \text{ r } \square$
- Change $3\frac{2}{3}$ to an improper fraction.
- Write this number:**
 $4 \times 10 + 6 \times 1000 + 5 \times 1 + 8 \times 10,000 =$
- If $5 \times 7 = 35$ then $50 \times 70 = 2400$
- The area of a book that is 25 cm x 10 cm = ²cm.
- $0.34 = \frac{\quad}{100}$

Level 18 Card 1

1. Addition and Subtraction

Example (Addition):

$$23 + 48$$

$$20 + 40 + 3 + 8 = 60 + 11 = 71$$

Use this strategy to add and subtract these numbers.

- | | | |
|------------------|------------------|------------------|
| a) $35 + 47 =$ | b) $29 + 62 =$ | c) $75 + 36 =$ |
| d) $45 - 23 =$ | e) $63 + 56 =$ | f) $67 - 42 =$ |
| g) $89 + 19 =$ | h) $55 + 73 =$ | i) $95 - 32 =$ |
| j) $64 + 26 =$ | k) $31 + 56 =$ | l) $79 - 53 =$ |
| m) $235 + 473 =$ | n) $278 - 162 =$ | o) $375 + 203 =$ |

2. Multiplication

- | | | | |
|--|--|--|---|
| a) $\begin{array}{r} 78 \\ \times 9 \\ \hline \end{array}$ | b) $\begin{array}{r} 94 \\ \times 8 \\ \hline \end{array}$ | c) $\begin{array}{r} 766 \\ \times 5 \\ \hline \end{array}$ | d) $\begin{array}{r} 835 \\ \times 4 \\ \hline \end{array}$ |
| e) $\begin{array}{r} 720 \\ \times 7 \\ \hline \end{array}$ | f) $\begin{array}{r} 399 \\ \times 8 \\ \hline \end{array}$ | g) $\begin{array}{r} 491 \\ \times 4 \\ \hline \end{array}$ | h) $\begin{array}{r} 2065 \\ \times 3 \\ \hline \end{array}$ |
| i) $\begin{array}{r} \$6.12 \\ \times 3 \\ \hline \end{array}$ | j) $\begin{array}{r} \$7.93 \\ \times 6 \\ \hline \end{array}$ | k) $\begin{array}{r} \$8.05 \\ \times 4 \\ \hline \end{array}$ | l) $\begin{array}{r} \$80.27 \\ \times 7 \\ \hline \end{array}$ |

Level 18 Card 2

1. Addition and Subtraction of Decimals

- | | | | |
|--|--|--|--|
| a) $\begin{array}{r} 1.67 \\ + 3.21 \\ \hline \end{array}$ | b) $\begin{array}{r} 5.34 \\ - 3.16 \\ \hline \end{array}$ | c) $\begin{array}{r} 36.66 \\ + 45.76 \\ \hline \end{array}$ | d) $\begin{array}{r} 43.63 \\ - 22.64 \\ \hline \end{array}$ |
|--|--|--|--|

- | | | | |
|--|--|---|--|
| e) $\begin{array}{r} \$90.14 \\ - 47.32 \\ \hline \end{array}$ | f) $\begin{array}{r} \$473.92 \\ - 4.08 \\ \hline \end{array}$ | g) $\begin{array}{r} \$267.47 \\ - 89.29 \\ \hline \end{array}$ | h) $\begin{array}{r} \$23.70 \\ + 55.35 \\ \hline \end{array}$ |
|--|--|---|--|

2. Addition and subtraction of decimals

- | | | | |
|------------------------|-----------------------|----------------------|-----------------------|
| a) $.3 + .7 =$ | b) $.4 + .6 =$ | c) $.1 + .9 =$ | d) $.2 + .8 =$ |
| e) $1 + .4 =$ | f) $1 - .2 =$ | g) $1 - .1 =$ | h) $.3 - .2 =$ |
| i) $.3 + \frac{2}{10}$ | j) $1 - \frac{3}{10}$ | k) $.4 \frac{5}{10}$ | l) $\frac{1}{2} + .4$ |

3. Addition and subtraction of fractions

- | | | | |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| a) $\frac{4}{5} + \frac{1}{5}$ | b) $\frac{1}{3} - \frac{1}{6}$ | c) $\frac{3}{8} + \frac{1}{4}$ | d) $\frac{2}{3} - \frac{1}{6}$ |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|

4. Show these as improper fractions:

- | | | | | | | |
|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|
| a) $2\frac{1}{3}$ | b) $4\frac{1}{2}$ | c) $7\frac{1}{3}$ | d) $12\frac{1}{4}$ | e) $6\frac{3}{8}$ | f) $4\frac{4}{5}$ | g) $8\frac{5}{6}$ |
|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|

- When counting by quarters, put these in order from smallest to largest: $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, 1
- If Pita ate $\frac{1}{4}$ of a pizza and Ramesh ate $\frac{3}{8}$ of a pizza, how much pizza did they eat altogether?

Level 18 Card 3

1. Write fractions (or mixed numbers) for these decimals.

a) $0.6 =$ c) $0.49 =$ e) $2.64 =$

b) $0.83 =$ d) $0.07 =$ f) $1.56 =$

2. Write the Place Value of each underlined digit, e.g thousands, hundreds, tens, ones, tenths, hundredths)

a) 28.16 b) 36.98 c) 18.29 f) 7.78

g) 563.78 h) 77.65 d) 2405.67 h) 345.45

3. Arrange the set of decimals from smallest to largest.

a) 0.65 0.87 0.36 0.75

b) 7.63 8.36 9.01 35.65

c) .02 3.02 3.2 1.97

d) 0.35 0.03 0.56 0.48

4. Write true (t) or false (f)

a) $0.4 > 0.45$ b) $0.37 > 0.73$ c) $1.9 < 9.1$

d) $0.61 < 0.07$ d) $0.08 > 0.02$ g) $1.04 > 1.40$

Level 18 Card 4

1. Counting with decimals

.3, .6, .9, 1.2, 1.5,3

2. Problem solving

Shoes cost \$75.35; Skateboard costs \$82.45; Video Game costs \$79.90 ; Flash drive costs \$16.35; Cap costs \$15.70

a) Find the cost of a cap and shoes.

b) How much would two skateboards and a flash drive cost?

c) If Tomasi had saved \$95.00, would he have enough to buy a video game?

d) How much more do shoes cost than three caps?

3. Place value

a) $216.00 \times 10 = \square$

b) $216.00 \times 100 = \square$

c) $2.16 \times 10 = \square$

c) $2.16 \times 100 = \square$

d) $216 \div 10 = \square$

e) $216 \div 100 = \square$

4. Mathematical sentences

a) $4 + (9 + 6) = (4 + \square) + 6$

b) $10 + (2 + 9) = (10 + \square) + 9$

c) $7 + (2 \times 3) = (3 \times \square) + \square$

d) $9 + (2 \times 5) = (5 \times 2) \times \square$

e) $10 + (5+6) = (10 + \square) + 4$

Level 18 Card 5

1. Counting patterns

- a) 1, 19, 2, 18, 3, 17, 8, 12
- b) 1, 2, 2, 4, 3, 6, 8, 16
- c) 9, 23, 10, 22, 11, 21, 15, 17

2. Complete each pattern

- a) $5 \times 4 = 20$ $5 \times .4 = \square$ $5 \times .04 = \square$ $.5 \times .4 = \square$
- b) $96 \div 12 = 8$ $96 \div 1.2 = 80$ $9.6 \div 12 = \square$ $9.6 \div 1.2 = \square$

3. Multiplying by tens

Example: 279
 x 70

20650

Step 1: Put the 0 down because you are multiplying by a ten. Step 2: Multiply by 7.

- | | | | |
|--------|--------|--------|--------|
| a) 23 | b) 87 | c) 54 | d) 19 |
| x 30 | x 70 | x 40 | x 60 |
| _____ | _____ | _____ | _____ |
| e) 148 | f) 342 | g) 129 | h) 194 |
| x 50 | x 20 | x 30 | x 60 |
| _____ | _____ | _____ | _____ |

4. Problem solving

A fish seller sold 40 fish at \$78 each. How much did he earn?

Level 18 Card 6

1. Multiplying Decimals

- | | | |
|---------|------------|-------------|
| a) 2.13 | b) 7.46 | c) 17.96 |
| x 3 | x 9 | x 6 |
| _____ | _____ | _____ |
| d) 13.8 | e) \$39.27 | f) \$400.05 |
| x 5 | x 8 | x 4 |
| _____ | _____ | _____ |

2. Solve these problems.

- a) Paula bought 8 books costing \$10.95 each. How much did he spend?
- b) Meena bought 5 softballs at \$6.95 each. What would be her change from \$40.00 note?
- c) How much timber would be left if a carpenter cut nine 1.75m lengths from a 20m timber?
- d) Tina's cat weighs 2.6 kilograms. Her dog weighs 4 times as much as her cat. How much does her dog weight in kilograms?
- e) A tea café uses 27.5 litres of milk a day. If they have a weekly delivery of 180 litres, how much milk will they have left after six days?
- f) At an Athletics Meet, an average of 123 athletes from 30 schools participated. How many athletes altogether took part?

Level 18 Card 7

1. Multiplying Decimals by 10 and 100

To multiply by 10, move the decimal point to the right *one* space, (*10 has one zero*)

e.g. $0.49 \times 10 = 4.9$

To multiply by 100, move the decimal point *two* spaces to the right, (*100 has two zeros*).

e.g. $2.65 \times 100 = 265.$ = 265

- a) $0.04 \times 10 =$ b) $8.46 \times 10 =$
c) $0.04 \times 100 =$ d) $8.46 \times 100 =$
e) $0.56 \times 10 =$ f) $32.4 \times 10 =$
g) $0.56 \times 100 =$ h) $32.4 \times 100 =$

2. Problem solving

a) Tamana's Poultry Farm produces an average of 2156 eggs each day. How many eggs will be produced in the month of June?

b) How many minutes are there in 18 hours?

3. Number patterns. Write the next three numbers.

- a) 6, 13, 20, 27, ____, ____, ____
b) 46, 58, 70, 82, ____, ____, ____
c) 3, 18, 33, 48, ____, ____, ____
d) 3, 12, 21, 30, ____, ____, ____

Level 18 Card 8

1. Dividing by Tens

$$3 \times 60 = \underline{\quad} \quad 180 \div 60 = \underline{\quad}$$

$$7 \times 40 = \underline{\quad} \quad 280 \div 40 = \underline{\quad}$$

$$6 \times 60 = \underline{\quad} \quad 360 \div 60 = \underline{\quad}$$

$$2 \times 40 = \underline{\quad} \quad 80 \div 40 = \underline{\quad}$$

$$8 \times 50 = \underline{\quad} \quad 400 \div 50 = \underline{\quad}$$

$$3 \times 90 = \underline{\quad} \quad 270 \div 90 = \underline{\quad}$$

$$4 \times 60 = \underline{\quad} \quad 240 \div 60 = \underline{\quad}$$

$$5 \times 30 = \underline{\quad} \quad 150 \div 30 = \underline{\quad}$$

$$9 \times 80 = \underline{\quad} \quad 720 \div 80 = \underline{\quad}$$

$$2 \times 60 = \underline{\quad} \quad 180 \div 60 = \underline{\quad}$$

3. Dividing Decimals by 10 and 100

To divide by 10, move the decimal point to the left *one* space, (*10 has one zero*), e.g. $2.8 \div 10 = 0.28$

To divide by 100, move the decimal point to the left *two* space, (*100 has two zeros*), e.g. $0.4 \div 100 = 0.004$ (You need to write zeros in front of the number.)

- a) $0.7 \div 10 =$ _____ b) $34.9 \div 10 =$ _____
c) $0.7 \div 100 =$ _____ d) $34.9 \div 100 =$ _____
e) $5.6 \div 10 =$ _____ f) $21.03 \div 10 =$ _____
g) $5.6 \div 100 =$ _____ h) $21.03 \div 100 =$ _____

Level 18 Card 9

1. Division

- a) If I started with 7,782 and kept on subtracting 6 until I reached zero, how many subtractions would I make? $9,783 - (9 \times \square) = 0$
- b) By what must I multiply 7 to get the answer, 9,730?
- c) Divide 4,709 by 8
- d) Divide 6,260 by 7

2. Problem solving with division

- a) A school has \$6,149 to spend on new chairs. If each chair costs \$9, how many chairs will the school be able to buy?
- b) Mrs Loloma collected and polished 936 shells to make bracelets. If 20 shells are put into each bracelet, how many bracelets can be made?
- c) A Suva car company wants to move 540 cars to Savusavu in Vanua Levu. If the ferry carries 40 cars at a time, how many trips will it make?
- d) Twelve buses, each holding an equal number of children, were used to take 468 children to the sports. How many children were there in each bus?
- e) A guitar teacher holds lessons for two hours each Monday and Wednesday. The lessons go for 30 minutes each. How many lessons does he take over the 2 days?

Level 18 Card 10

1. Extended Multiplication (Long Multiplication)

$$\begin{array}{r} 53 \\ \times 27 \\ \hline 21 \\ 350 \\ 60 \\ 1000 \\ \hline 1431 \end{array}$$

(Example)

Set these out the same way:

- a) 54×43
- b) 65×53
- c) 49×53
- d) 77×19
- e) 63×48
- f) 50×44
- g) 109×27
- h) 78×43
- i) 178×43

2. Problem solving

- a) If a vegetable grower planted 57 rows of cabbages with 136 cabbages in each row, how many cabbages did he plant altogether?
- b) Kara is 8 years old and her sister Joanna is 7. When Kara is twice as old as she is now, how old will Joanna be?
- c) 15 sacks of potatoes each contain 120 potatoes. How many potatoes?

Level 18 card 11

1. Multiplying Fractions

$4 \times \frac{5}{6}$ b) $2 \times \frac{4}{5}$ c) $5 \times \frac{2}{3}$ d) $3 \times \frac{7}{8}$ e) $4 \times \frac{4}{5}$

2. Solve these problems.

- If six students ate $\frac{3}{8}$ of a pizza, how many pizzas did the children eat?
- Mum bought six $\frac{1}{2}$ kg bags of onions. How many kilograms of onions did she buy?
- Mere buys $\frac{1}{2}$ a litre of milk daily for 5 days. How much milk does she buy in a week?
- Tomasi had \$1.00 to spend. How much was the pen he bought if it was equal to $\frac{1}{4}$ of his money?
- Raju watched thirty planes land at Nausori Airport. Five-sixths of them were from Fiji Airways. How many planes were not from Fiji Airways?
- Miss Fong has fourteen plants. Half of them have flowers. How many of her plants don't have flowers?
- There are forty students in our class. Three-fifths of the students are boys. How many girls are in our class?

Level 18 Card 12

1. Problems solving with fractions

- Which of the answers is greater than $\frac{3}{8}$ but less than $\frac{5}{8}$? A) $\frac{3}{4}$ B) 1 C) $\frac{1}{4}$ D) $\frac{1}{2}$
- Salote was given a cake. If her friend ate $\frac{1}{5}$ of it and she ate $\frac{3}{10}$, how much cake was left?
- Jale bought a packet of 60 biscuits on Saturday. On Sunday he ate half of them. On Monday he ate 19 of them. How many biscuits did he have left for Tuesday?
- Mrs Lal made a fruit salad with $\frac{5}{6}$ of a kilogram of pawpaw and $\frac{1}{2}$ of a kilogram of guavas. How many kilograms of fruit did she use in all?

2. Equations

Write true (t) or false (f) for the following:

- $8 \times (1 + 2) = (8 \times 1) + (8 \times 2)$
- $6 \times (7 + 8) = (7 \times 6) + (8 \times 6)$
- $10 \times (4 + 6) = (4 \times 10) + (4 \times 6)$
- $3 \times (9 + 7) = (9 \times 3) + (9 \times 7)$
- $13 \times (9 + 10) = (13 \times 9) \times (13 \times 10)$
- $12 \times (10 + 9) = (12 \times 10) + (12 \times 9)$

Level 18 Card 13

1. Dividing Decimals

- a) $8.42 \div 2$ b) $47.65 \div 5$ c) $6.75 \div 10$

3. Problems with dividing decimals

- a) Soft Toilet Roll is 5 for \$2.25. How much is one roll?
b) Tomato Sauce is 3 for \$1.85. How much for one bottle?
c) Soap is 5 for \$2.15. How much for one?

4. Money problems

- a) If three people went for a haircut and it was \$6.45 for each of them. How much would it cost altogether?
b) What's the difference between \$3.75 and \$4.85?
c) If I have \$20.50 and I spend \$7.31, how much do I have left?
d) Petrol costs 80c per litre. How many litres can I buy for \$40?
e) If two men worked on a car for 3 hours. The one man's labour is \$5 per hour, the other man's \$3.50 per hour. What is the total bill for labour?
f) I went to the shop and bought some groceries for my Mum. They cost \$29.65. If Mum gave me \$40.00, how much change did I get?

Level 18 Card 14

1. Money Problems

- a) Khusbu gets 50c pocket money each week. She is saving for a new pencil case, which costs \$4.00. How many weeks will she have to save for until she has enough money to buy it?
b) Marika would like a new ruler set that costs \$9.50. He gets 50c per week. How long will he have to save for until he can buy it?

2. Household budget problems

Mr and Mrs. Samu have three children. Each week, Mr Samu earns \$200 and Mrs Samu earns \$100.

- a) How much do they earn altogether?

Each week they have to pay the following bills:

Food - \$90 *Rent* - \$30 *Bus fares* - \$10

Gas & electricity - \$40 *School meals* - \$30

Clothes - \$20 *House insurance* - \$10

- b) How much money do they have left?
c) If Mrs Samu lost her job, would they have enough money?
d) What advice would give Mrs Samu so that she is able to save money?

Level 18 Card 15

1. Union Of sets

Two sets can be “added” together to form the union of the two sets.

When we do this, the union of the two sets contains all the elements of both sets.

If Set A = {1, 2, 3, 4, 5} and Set B = {2, 4, 6}, then the union of these sets is: $A \cup B = \{1, 2, 3, 4, 5, 6\}$.

U is the symbol for set union.

- Write the union of Set C = {15, 17, 19, 21} and Set D = {14, 16, 18, 20}
- Write the Union of Set X = {red, yellow, blue} and Set Y = {green, purple, orange}

2. Equivalent Sets

Write true (t) if the cardinal number is the same in these.

Write false (f) if it's not.

- {numbers less than five} {Letters of the word 'BOAT'}
- {a, b, c, d} { Δ , \circ , \square , ∇ }
- {Days of the week} {Letters of the word 'HONESTY'}
- {Letters of the word 'MEMBER'} {Letters of the word 'REMEMBER'}
- {1, 3, 5, 7} {set of odd natural numbers less than 10}

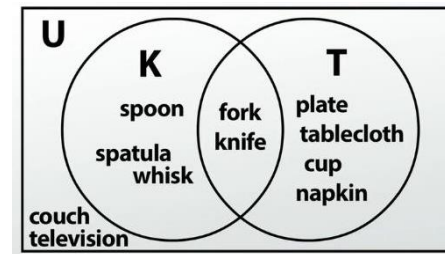
Level 18 Card 16

Intersection of Sets

When two sets have members that are the same, we say the sets *intersect*.

The *intersection* of two sets is when the same things are in both sets. This can be shown by a *Venn diagram*.

Example:



In a house there is a set of **K**itchen cooking equipment and a set of **T**able equipment. See how the fork and knife are common to both? They *intersect*.

The intersection of the two sets is $K \cap T = \{\text{fork, knife}\}$.

\cap is the symbol for set *intersection*.

Try this:

Set P = {3, 4, 5, 6, 7} and Set Q = {5, 6, 7, 8, 9, 10}. The intersection of these sets is $P \cap Q = \{\dots\dots\dots\}$.

Draw it as a Venn diagram.

Level 18 Card 17

Measurement: Weight / Mass

What's the difference between weight and mass? Mass is a measurement of how much matter is in an object; weight is a measurement of how hard gravity is pulling on that object.

Estimate the weight of the following.

Scissors

Pencil case

Jam jar

Watch

Rubber

Paper punch

Convert these measurements to a different unit of mass.

1 000 grams = 1 kilogram 1 000 g = 1 kg

a) 5 kg = □ g

b) 7.5 kg = □ g

c) 3.5 kg = □ g

d) 100 kg = □ g

e) 10 kg = □ g

f) 10.5 kg = □ g

g) 9 041 g = □ kg

h) 733g = □ g

Problem Solving

A jar of peanut butter has a mass of 1.340 kg. If the jar's mass is 235 g, what is the mass of the peanut butter?

Level 18 Card 18

Measurement: Time and Temperature

1. Read and write time in digital and analogue time in Words, (12-Hour Time 24-Hour Time)

Example: Four o'clock in the afternoon 4:00 pm 1600 hours

a) Midnight

b) Five past four in the afternoon

c) Midday

2. Word Problem

The Yasawa Flyer left Naviti Island at 10.30am; it reached Nacula Island after 1 hour 44 minutes. At what time did it arrive in Nacula Island? (Use am or pm for your answer.)

Temperature

The Fahrenheit scale was developed by German-born Gabriel Daniel Fahrenheit in 1714 to go with his new invention, the mercury thermometer. Zero was the coldest temperature that Fahrenheit could create with a mixture of ice and ordinary salt. Water freezes at 32°F; it boils at 212°F.

Anders Celsius, a Swedish astronomer, introduced his scale in 1742. He used the freezing point of water as zero and the boiling point as 100. The Celsius scale, also called centigrade, is part of the metric system and is used throughout the world.

Activity: Record the temperature for one week, beginning on Monday for the five school days. First estimate the temperature and then use the thermometer to take the actual reading.

Level 18 Card 19

Geometry

Geometry is the study of shapes

What are shapes? Shapes are flat two-dimensional objects, whether regular or irregular. Shapes also include three dimensional objects. Shapes can also be one dimensional. Geometric figures can have one, two, or three dimensions

What is dimension? Dimension is a measure in one direction.

One dimensional shapes are shapes that are measured in only one direction, e.g. a square or a triangle

Line segment Ray

A line segment starts at a point and ends at another, e.g.



Above is a line segment with the symbol AB

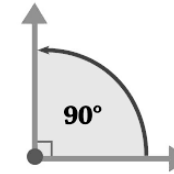
Draw a line segment 6cm in length and name it: 'AZ'.

Level 18 Card 20

Geometry: Types of angles

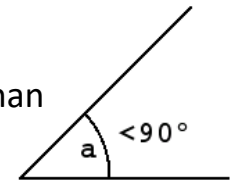
Right Angle

A right angle is made when the two rays are *perpendicular* to each other.



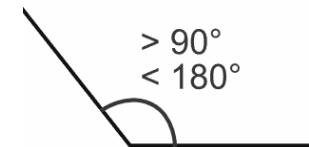
Acute Angle

The angle is less than a right angle (less than 90°)



Obtuse Angle

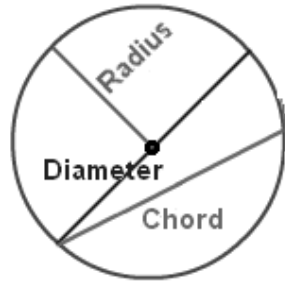
Bigger than a right angle but less than two right angles. More than 90° but less than 180° .



Card 21 Geometry

The Circle

Study the diagram and complete these sentences.



1. Center

The middle of a _____ is the same distance from the _____ to any point of the circle.

2. Diameter

A _____ segment that passes through the _____ of a circle and has its endpoints on the opposite side of the _____. The diameter cuts the circle into _____ equal parts. One part is called a semi-circle.

3. Radius

A _____ segment with one endpoint at the _____ of the circle and the other endpoint on the _____. _____ radii (plural of radius) make one _____.

4. Circumference

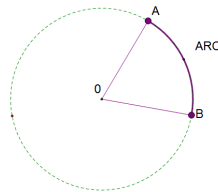
This is the distance around the _____.

5. Chord

A _____ segment that has its endpoints on opposite sides of the _____ but does not pass through the _____.

6. Arc

This is any part of the curve on the circumference of a _____.



Card 22 Test

1. $23 + 48 = 20 + 40 + 3 + 8 = 60 + 11 = 71$

In the same way, set out $72 + 39$.

2. 54

X 8

3. 87.02

+ 3.21

4. Subtract .2 from 1 =

5. Write $3\frac{1}{2}$ as an improper fraction.

6. Arrange the set of decimals from smallest to largest.

0.65 0.87 0.36 0.75

7. $2 \times 40 = \underline{\quad}$ $80 \div 40 = \underline{\quad}$

8. Set out, and work out 46×32 as a long multiplication.

9. Mum bought seven $\frac{1}{2}$ kg bags of potatoes. How many kilograms of potatoes did she buy?

10. True or false? $6 \times (7 + 8) = (7 \times 6) + (8 \times 6)$

11. How much change from \$50 if I spent 24.95?

12. Continue the pattern: 3, 6, 12, 24, _____, _____, _____, _____

13. $0.04 \times 10 =$

14. $6.75 \div 10 =$

15. A rectangular garden is 2.5 metres wide, 6.2 metres long. What is the perimeter?

16. A baking tray is 30 cm long and 15 cm wide. What is the area?