

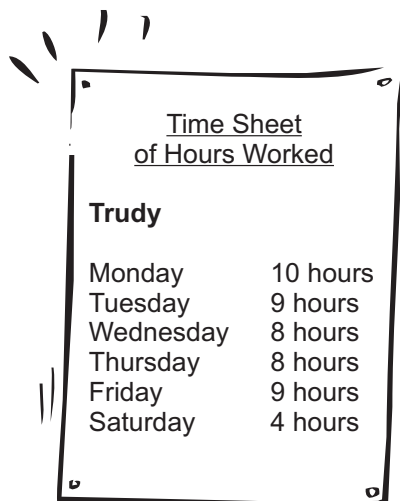
Year 9 - Worksheet 7

NUMBER APPLICATIONS

1. A team in the English soccer league has 17 points. They have played 15 games. For a win there is 3 points, for a draw there is 1 point.

What are the various combinations (of Win, Draw or Lose) that would have summed to 17?

2. The weekly time sheet of hours spent at work for Trudy is below.



Time Sheet of Hours Worked	
Trudy	
Monday	10 hours
Tuesday	9 hours
Wednesday	8 hours
Thursday	8 hours
Friday	9 hours
Saturday	4 hours

For days during the week, 8 hours is ordinary time and any hours worked after are considered overtime.

Work on Saturday is all counted as overtime.

The ordinary hourly rate is \$22.50 per hour and overtime is 1.5 times the ordinary rate.

How much would Trudy receive for the week?

Find the lowest common multiple of the following pairs of numbers:

1. 3 and 4 _____
2. 5 and 6 _____
3. 7 and 4 _____
4. 2 and 5 _____
5. 3 and 12 _____
6. 7 and 9 _____
7. 14 and 4 _____
8. 15 and 25 _____
9. 8 and 9 _____
10. 16 and 5 _____

Find the highest common factor of the following pairs of numbers:

1. 10 and 12 _____
2. 14 and 8 _____
3. 4 and 16 _____
4. 15 and 45 _____
5. 20 and 28 _____
6. 40 and 64 _____
7. 54 and 80 _____
8. 110 and 140 _____
9. 60 and 80 _____
10. 20, 15 and 40 _____

INVESTIGATION

Multiplication can be down by powers.

For example: $8 \times 4 = 2^3 \times 2^2$
 $= 2^{3+2}$
 $= 2^5$
 $= 32$

$128 \div 16 = 2^7 \div 2^4$
 $= 2^{7-4}$
 $= 2^3$
 $= 8$

1	2	4	8	16	32	64	128	256	512	1024	2048	4096
2^0	2^1	2^2	2^3	2^4	2^5	2^6	2^7	2^8	2^9	2^{10}	2^{11}	2^{12}

Use the following table to do the calculations below. Only use a calculator to check your results!

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. 16×4 _____ 2. 32×64 _____ 3. 8×128 _____ 4. 4×128 _____ 5. $8 \times 8 \times 64$ _____ | <ol style="list-style-type: none"> 6. $16 \div 4$ _____ 7. $256 \div 8$ _____ 8. $128 \div 16$ _____ 9. $2048 \div 32$ _____ 10. $4096 \div 256$ _____ |
|---|--|

PUZZLE

Using the numbers from 4 to 12 complete the square so that the totals of each row, column and diagonal are the same.

		11
	8	
5		7

INVESTIGATION

Multiplying numbers that differ by 2.

e.g. $29 \times 31 = 899$

You could use a calculator!

or square the middle number $30 \times 30 = 900$
then subtract 1 $900 - 1 = 899$

Try this method with the following:

1. 19×21 i.e. $20 \times 20 = \boxed{} - 1 = \boxed{}$

2. $24 \times 26 =$ _____

3. $41 \times 39 =$ _____

4. 49×51 _____

5. $99 \times 101 =$ _____

NUMERACY STRATEGIES

Multiplication by compensation: e.g. 4×9 try $4 \times 10 = 40$
 $40 - 4 = 36$

e.g. 9×22 try $9 \times 20 = 180$
 $180 + 18 = 198$

Use the multiplication by compensation method for each of the following

1. $7 \times 22 =$ _____

6. $5 \times 51 =$ _____

2. $3 \times 31 =$ _____

7. $6 \times 58 =$ _____

3. $8 \times 19 =$ _____

8. $8 \times 81 =$ _____

4. $6 \times 42 =$ _____

9. $9 \times 119 =$ _____

5. $8 \times 399 =$ _____

10. $7 \times 88 =$ _____

NUMERACY STRATEGIES

Numbers can be added quickly by regrouping:

e.g. $17 + 8 + 3 + 2 + 9$

$$17 + 3 + 8 + 2 + 9 = 20 + 10 + 9 = 39$$

Regroup the following numbers then find the sum.

1. $5 + 9 + 3 + 11 + 7 =$ _____

2. $8 + 3 + 2 + 5 + 7 =$ _____

3. $6 + 11 + 4 + 3 + 9 =$ _____

4. $21 + 13 + 9 + 17 =$ _____

5. $121 + 17 + 19 + 23 =$ _____

6. $14 + 23 + 6 + 7 + 3 =$ _____

7. $25 + 49 + 5 + 11 + 6 =$ _____

8. $123 + 18 + 7 + 12 =$ _____

9. $83 + 74 + 7 + 6 + 3 =$ _____

10. $127 + 83 + 13 + 17 + 4 =$ _____

QUICK QUESTIONS

Use any strategy except for a calculator

1. $37 + 142 =$ _____

2. $58 - 47 =$ _____

3. $31 \times 3 =$ _____

4. $8 \times 7 =$ _____

5. $\$1.20 \times 4 =$ _____

6. $84c \div 4 =$ _____

7. $50c + 125c =$ _____

8. $\frac{1}{2}$ cake + $\frac{1}{4}$ cake = _____

9. $54 \div 6 =$ _____

10. $\frac{1}{2}$ of $\frac{1}{2} =$ _____