

TARGET To develop strategies to work out mental calculations.

Examples

ADDITION AND SUBTRACTION

Partitioning

$$643 + 270$$

$$643 + 200 + 70$$

$$843 + 70$$

$$913$$

Adjusting

$$8.5 - 3.9$$

$$8.5 - 4.0 + 0.1$$

$$4.5 + 0.1$$

$$4.6$$

Counting Up

$$7003 - 4964$$

$$4964 \rightarrow 4970 \quad 6$$

$$4970 \rightarrow 5000 \quad 30$$

$$5000 \rightarrow 7003 \quad \underline{2003}$$

$$7003 - 4964 = 2039$$

Near Doubles

$$6.9 + 7.2$$

$$(7 \times 2) - 0.1 + 0.2$$

$$14 - 0.1 + 0.2$$

$$14 + 0.1$$

$$14.1$$

MULTIPLICATION AND DIVISION

Using factors

$$26 \times 18$$

$$26 \times 2 \times 3 \times 3$$

$$52 \times 3 \times 3$$

$$156 \times 3$$

$$468$$

Partitioning

$$7.4 \times 7$$

$$(7 \times 7) + (0.4 \times 7)$$

$$49 + 2.8$$

$$51.8$$

Multiply By 49/51 etc.

$$19 \times 51$$

$$(19 \times 50) + (19 \times 1)$$

$$950 + 19$$

$$969$$

Doubling/halving

$$36 \times 15$$

$$(36 \times 30) \div 2$$

$$1080 \div 2$$

$$540$$

A

Choose one method for each group of six problems.

$$1 \quad 7 \times 19$$

$$2 \quad 13 \times 21$$

$$3 \quad 15 \times 19$$

$$4 \quad 18 \times 21$$

$$5 \quad 22 \times 19$$

$$6 \quad 16 \times 21$$

$$7 \quad 2.4 + 1.1$$

$$8 \quad 5.8 - 1.1$$

$$9 \quad 8.3 + 0.9$$

$$10 \quad 6.7 - 0.9$$

$$11 \quad 3.5 - 1.1$$

$$12 \quad 9.2 + 0.9$$

$$13 \quad 403 - 195$$

$$14 \quad 807 - 472$$

$$15 \quad 702 - 281$$

$$16 \quad 5000 - 1991$$

$$17 \quad 9000 - 4984$$

$$18 \quad 6008 - 3996$$

$$19 \quad 13 \times 6$$

$$20 \quad 16 \times 8$$

$$21 \quad 17 \times 9$$

$$22 \quad 180 \div 12$$

$$23 \quad 240 \div 15$$

$$24 \quad 216 \div 12$$

$$25 \quad 39 + 42$$

$$26 \quad 73 + 68$$

$$27 \quad 47 + 51$$

$$28 \quad 3.4 + 3.3$$

$$29 \quad 2.3 + 2.1$$

$$30 \quad 4.9 + 5.2$$

$$31 \quad 24 \times 5$$

$$32 \quad 35 \times 5$$

$$33 \quad 28 \times 50$$

$$34 \quad 17 \times 50$$

$$35 \quad 6 \times 15$$

$$36 \quad 14 \times 15$$

$$37 \quad 37 \times 4$$

$$38 \quad 56 \times 5$$

$$39 \quad 29 \times 6$$

$$40 \quad 45 \times 7$$

$$41 \quad 24 \times 8$$

$$42 \quad 38 \times 9$$

$$43 \quad 134 + 52$$

$$44 \quad 327 + 44$$

$$45 \quad 265 + 38$$

$$46 \quad 582 - 64$$

$$47 \quad 337 - 46$$

$$48 \quad 415 - 78$$

B

Choose one method for each group of six problems.

- | | |
|-------------------|--------------------|
| 1 27×15 | 25 $5700 + 2800$ |
| 2 36×15 | 26 $0.4 + 0.32$ |
| 3 23×25 | 27 $0.57 + 0.26$ |
| 4 38×25 | 28 $9300 - 4600$ |
| 5 14×26 | 29 $0.7 - 0.24$ |
| 6 18×38 | 30 $0.82 - 0.58$ |
| 7 $304 + 298$ | 31 13×49 |
| 8 $197 + 202$ | 32 18×51 |
| 9 $403 + 395$ | 33 22×49 |
| 10 $3.9 + 3.7$ | 34 14×101 |
| 11 $4.8 + 5.3$ | 35 17×99 |
| 12 $3.3 + 2.9$ | 36 23×101 |
| 13 22×14 | 37 $4.5 + 1.9$ |
| 14 19×27 | 38 $7.3 - 2.9$ |
| 15 23×21 | 39 $5.6 + 4.1$ |
| 16 $252 \div 18$ | 40 $9.8 - 2.1$ |
| 17 $408 \div 24$ | 41 $3.4 + 3.9$ |
| 18 $288 \div 16$ | 42 $6.7 - 4.1$ |
| 19 $705 - 477$ | 43 54×6 |
| 20 $921 - 394$ | 44 87×8 |
| 21 $617 - 272$ | 45 73×9 |
| 22 $8000 - 3588$ | 46 6.5×7 |
| 23 $5004 - 2963$ | 47 4.9×8 |
| 24 $9018 - 5949$ | 48 9.7×6 |

C

Choose one method for each group of six problems.

- | | |
|----------------------------|----------------------------|
| 1 $\square - 30.5 = 29.7$ | 25 $\square + 4.2 = 7.4$ |
| 2 $\square - 18.3 = 20.1$ | 26 $\square + 5.9 = 9.6$ |
| 3 $\square - 41.2 = 39.5$ | 27 $\square + 4.8 = 5.3$ |
| 4 $\square - 48.9 = 51.4$ | 28 $\square + 6.1 = 11.7$ |
| 5 $\square - 29.4 = 31.6$ | 29 $\square + 3.9 = 4.8$ |
| 6 $\square - 38.2 = 40.3$ | 30 $\square + 7.2 = 8.5$ |
| 7 34×14 | 31 $\square \div 7 = 4.8$ |
| 8 2.7×18 | 32 $\square \div 9 = 7.6$ |
| 9 4.9×15 | 33 $\square \div 8 = 5.9$ |
| 10 56×2.5 | 34 $\square \div 6 = 6.7$ |
| 11 35×4.8 | 35 $\square \div 7 = 9.5$ |
| 12 45×3.9 | 36 $\square \div 9 = 8.3$ |
| 13 $\square + 3800 = 7100$ | 37 $6200 - \square = 2874$ |
| 14 $\square + 7.6 = 18.35$ | 38 $8100 - \square = 3762$ |
| 15 $\square + 0.53 = 2.17$ | 39 $9300 - \square = 5696$ |
| 16 $\square - 4500 = 8800$ | 40 $7200 - \square = 4783$ |
| 17 $\square - 5.7 = 9.46$ | 41 $8400 - \square = 3679$ |
| 18 $\square - 0.38 = 0.92$ | 42 $9100 - \square = 4885$ |
| 19 16×5.4 | 43 $\square \div 29 = 17$ |
| 20 21×2.7 | 44 $\square \div 41 = 13$ |
| 21 12×0.63 | 45 $\square \div 59 = 16$ |
| 22 $4.9 \div 14$ | 46 $\square \div 31 = 19$ |
| 23 $50.4 \div 24$ | 47 $\square \div 39 = 14$ |
| 24 $4.32 \div 18$ | 48 $\square \div 61 = 18$ |

TARGET To use mental methods to add and subtract large numbers.

A

Write the answer only.

1 $1438 + 700$

2 $5307 + 2008$

3 $29\,824 + 480$

4 $1125 - 500$

5 $76\,350 - 20\,800$

6 $8240 - 75$

7 $35\,909 + 5300$

8 $46\,713 + 5070$

9 $31\,328 + 907$

10 $12\,519 - 6400$

11 $508\,250 - 302$

12 $173\,490 - 6009$

13 $18\,075 + 38$

14 $292\,160 + 24\,000$

15 $558\,176 + 9009$

16 $26\,125 - 970$

17 $314\,008 - 5400$

18 $327\,179 - 40\,030$

B

Write the answer only.

1 $178\,345 + 5006$

2 $2046\,913 + 80\,400$

3 $527\,830 + 970$

4 $65\,204 + 35\,000$

5 $139\,090 - 70\,006$

6 $9712\,451 - 5090$

7 $381\,629 - 3600$

8 $1\,044\,372 - 180\,000$

9 $579\,144 + 40\,009$

10 $305\,817 + 200\,300$

11 $127\,266 + 48$

12 $39\,588 + 5900$

13 $4052\,400 - 9030$

14 $7163\,425 - 200\,900$

15 $235\,897 - 26\,000$

16 $418\,200 - 740$

C

Write the answer only.

1 $350\,247 + 80\,800$

2 $6109\,081 + 2000\,060$

3 $237\,425 + 2900$

4 $9514\,963 + 2600\,000$

5 $762\,390 - 2009$

6 $1480\,152 - 800\,600$

7 $2736\,879 - 97\,000$

8 $941\,500 - 58$

9 $3708\,654 + 3070$

10 $10452\,037 + 800\,209$

11 $518\,990 + 650$

12 $4760\,716 + 460\,005$

13 $20429\,240 - 6080\,001$

14 $153\,805 - 90\,030$

15 $61473\,280 - 1700\,000$

16 $5093\,000 - 5420$

TARGET To perform mental calculations involving large numbers and mixed operations.

A

Write the answer only.

- | | | |
|--------------------------|-----------------------|----------------------------|
| 1 $(17 + 43) \times 9$ | 7 $49\,237 + 60\,005$ | 13 $(57 + 39) \div 8$ |
| 2 $10 \div (109 - 89)$ | 8 $15\,982 + 4700$ | 14 $11 \times (47 + 43)$ |
| 3 $(80 \times 7) - 99$ | 9 $166\,830 + 180$ | 15 $(220 - 180) \times 12$ |
| 4 $64 + (2100 \div 30)$ | 10 $85\,211 - 7040$ | 16 $840 \div (24 + 46)$ |
| 5 $(1000 - 250) \div 50$ | 11 $93\,640 - 68$ | 17 $(100 \div 4) + 38$ |
| 6 $100 \times (5 - 1.9)$ | 12 $473\,000 - 370$ | 18 $150 - (13 \times 6)$ |

B

Write the answer only.

- 1 $62\,681 + 9050$
- 2 $1\,570\,354 + 60\,050$
- 3 $804\,739 + 71$
- 4 $3\,469\,048 + 570\,000$
- 5 $(3 \times 45) + (45 \div 3)$
- 6 $(76 + 124) \times (80 - 27)$
- 7 $(365 + 75) \div (48 + 62)$
- 8 $(90 \times 90) - (6000 \div 5)$
- 9 $235\,173 - 90\,700$
- 10 $4\,716\,926 - 5070$
- 11 $304\,052 - 6200$
- 12 $2\,155\,230 - 48\,000$
- 13 $(71 - 45) \times (50 - 29)$
- 14 $(480 \div 12) + (8 \times 14)$
- 15 $(111 - 39) \div (5.1 + 3.9)$
- 16 $(25 \times 16) - (0.25 \times 1000)$

C

Write the answer only.

- 1 $12\,823\,176 + 207\,000$
- 2 $26\,164\,509 + 9\,000\,502$
- 3 $5\,078\,943 + 980$
- 4 $8\,497\,082 + 59\,040$
- 5 $20\,136\,500 - 800\,070$
- 6 $9\,310\,417 - 60\,909$
- 7 $71\,265\,804 - 740\,020$
- 8 $3\,509\,550 - 599$
- 9 $(0.4 \times 15) - (12.5 \div 100)$
- 10 $(1 - 0.85) \times (1.8 \times 5)$
- 11 $(2 \div 8) + (0.025 \times 8)$
- 12 $(0.1 - 0.044) \div (0.35 \times 20)$
- 13 $4 + (7 \times 13) - (128 \div 8)$
- 14 $500 - (240 \div 16) + (16 \times 16)$
- 15 $10 - (0.038 \times 100) - (4 \div 5)$
- 16 $4.8 + (7.2 \div 6) + (1.2 \times 30)$

TARGET To identify common multiples.

Multiples are the numbers in a multiplication table. If we make separate lists of the multiples of two numbers some of their multiples will be common to both lists.

Examples

Multiples of 4 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, ... 60, ... 80, ...

Multiples of 5 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ... 80, ...

Common Multiples The common multiples of 4 and 5 are 20, 40, 60, 80 and so on.

Lowest Common Multiple The lowest common multiple of 4 and 5 is 20.

A

Write down the first six multiples of:

- | | |
|-----|-------|
| 1 5 | 3 11 |
| 2 8 | 4 20. |

Write Yes or No.

- 5 Is 47 a multiple of 2?
- 6 Is 39 a multiple of 3?
- 7 Is 36 a multiple of 4?
- 8 Is 58 a multiple of 5?
- 9 Is 72 a multiple of 6?
- 10 Is 72 a multiple of 7?
- 11 Is 72 a multiple of 8?
- 12 Is 72 a multiple of 9?
- 13 Is 105 a multiple of 10?
- 14 Is 330 a multiple of 11?
- 15 Is 132 a multiple of 12?
- 16 Is 100 a multiple of 15?
- 17 Find
 - a) the 20th multiple of 6
 - b) the 8th multiple of 15.

B

Find two numbers that are common multiples of:

- | | |
|-----------|------------|
| 1 2 and 5 | 5 4 and 7 |
| 2 2 and 7 | 6 5 and 6 |
| 3 3 and 5 | 7 2 and 11 |
| 4 3 and 8 | 8 3 and 7. |

Find the lowest common multiple of:

- | | |
|-------------|--------------|
| 9 2 and 9 | 13 4 and 6 |
| 10 3 and 11 | 14 6 and 10 |
| 11 3 and 4 | 15 8 and 6 |
| 12 6 and 7 | 16 10 and 8. |

Find the lowest common multiple of each group of numbers.

- 17 3, 6 and 12
- 18 4, 6 and 12
- 19 2, 3 and 4
- 20 2, 3 and 5
- 21 2, 4 and 8
- 22 3, 4 and 8
- 23 The 9th multiple of 16 is the 8th multiple of which number?

C

Find three numbers that are multiples of:

- | | |
|------------|-------------|
| 1 3 and 4 | 5 5 and 7 |
| 2 2 and 9 | 6 6 and 8 |
| 3 3 and 11 | 7 4 and 9 |
| 4 4 and 5 | 8 6 and 10. |

Find the lowest common multiple of:

- | | |
|-------------|---------------|
| 9 2 and 13 | 13 10 and 12 |
| 10 4 and 14 | 14 15 and 25 |
| 11 5 and 11 | 15 8 and 12 |
| 12 4 and 10 | 16 16 and 18. |

Find the lowest common multiple of each group of numbers.

- 17 3, 5 and 6
- 18 4, 5 and 6
- 19 2, 4 and 7
- 20 3, 4 and 7
- 21 3, 4 and 8
- 22 3, 5 and 8
- 23 The 12th multiple of 44 is the 11th multiple of which number?

TARGET To identify common factors and prime numbers.

Examples

Factors of 16 1, 2, 4, 8, 16

Factors of 40 1, 2, 4, 5, 8, 10, 20, 40

Common factors 1, 2, 4, 8

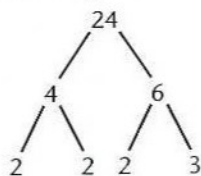
Highest common factor 8

Prime numbers – 2 factors only e.g. 23

Composite numbers – more than 2 factors e.g. 24

Prime factors can be found by using a factor tree.

Prime factors of 24: $2 \times 2 \times 2 \times 3$



A

Find all the factors of each number. The number of factors is shown in brackets.

- | | |
|----------|------------|
| 1 12 (6) | 7 55 (4) |
| 2 28 (6) | 8 18 (6) |
| 3 25 (3) | 9 100 (9) |
| 4 30 (8) | 10 54 (8) |
| 5 32 (6) | 11 49 (3) |
| 6 27 (4) | 12 60 (12) |

Write down the number(s) in each group which are not prime numbers.

- 13 7 8 9 10
- 14 17 18 19 20
- 15 23 24 25 26
- 16 31 32 33 34
- 17 46 47 48 49
- 18 56 57 58 59
- 19 70 71 72 73
- 20 88 89 90 91

- 21 The first five prime numbers are:
2, 3, 5, 7, 11
Write down the next ten prime numbers.

B

For each pair of numbers find:

- a) the common factors
b) the highest common factor.

- | | |
|----------|-----------|
| 1 6, 15 | 7 36, 96 |
| 2 16, 24 | 8 40, 100 |
| 3 45, 60 | 9 28, 70 |
| 4 12, 18 | 10 32, 72 |
| 5 8, 12 | 11 18, 30 |
| 6 27, 36 | 12 24, 60 |

- 13 List all the prime numbers below 100.
There are 25.

Explain why these numbers are composite numbers.

- | | |
|--------|---------|
| 14 738 | 18 1990 |
| 15 273 | 19 177 |
| 16 415 | 20 301 |
| 17 119 | 21 143 |

Find all the prime factors of:

- | | |
|-------|--------|
| 22 50 | 26 52 |
| 23 36 | 27 132 |
| 24 28 | 28 90 |
| 25 60 | 29 72 |

C

For each group of numbers find:

- a) the common factors
b) the highest common factor.

- 1 20, 32, 60
- 2 225, 450, 600
- 3 32, 64, 80
- 4 9, 27, 33
- 5 56, 96, 120
- 6 36, 54, 108
- 7 30, 48, 84
- 8 45, 72, 135

Explain why these numbers are composite numbers.

- 9 253 11 1923
- 10 221 12 361

Find all the prime numbers between:

- 13 100 and 110
- 14 130 and 140
- 15 150 and 160
- 16 190 and 200.

Find the prime factors of:

- | | |
|--------|---------|
| 17 200 | 21 182 |
| 18 144 | 22 375 |
| 19 162 | 23 252 |
| 20 264 | 24 440. |

A

1 133	13 208	25 81	37 148
2 273	14 335	26 141	38 280
3 285	15 421	27 98	39 174
4 378	16 3009	28 6·7	40 315
5 418	17 4016	29 4·4	41 192
6 336	18 2012	30 10·1	42 342
7 3·5	19 78	31 120	43 186
8 4·7	20 128	32 175	44 371
9 9·2	21 153	33 1400	45 303
10 5·8	22 15	34 850	46 518
11 2·4	23 16	35 90	47 291
12 10·1	24 18	36 210	48 337

B

1 405	13 308	25 8500	37 6·4
2 540	14 513	26 0·72	38 4·4
3 575	15 483	27 0·83	39 9·7
4 950	16 14	28 4700	40 7·7
5 364	17 17	29 0·46	41 7·3
6 684	18 18	30 0·24	42 2·6
7 602	19 228	31 637	43 324
8 399	20 527	32 918	44 696
9 798	21 345	33 1078	45 657
10 7·6	22 4412	34 1414	46 45·5
11 10·1	23 2041	35 1683	47 39·2
12 6·2	24 3069	36 2323	48 58·2

C

1 60-2	13 3300	25 3-2	37 3326
2 38-4	14 10-75	26 3-7	38 4338
3 80-7	15 1-64	27 0-5	39 3604
4 100-3	16 13 300	28 5-6	40 2417
5 61	17 15-16	29 0-9	41 4721
6 78-5	18 1-3	30 1-3	42 4215
7 476	19 86-4	31 33-6	43 493
8 48-6	20 56-7	32 68-4	44 533
9 73-5	21 7-56	33 47-2	45 944
10 140	22 0-35	34 40-2	46 589
11 168	23 2-1	35 66-5	47 546
12 175-5	24 0-24	36 74-7	48 1098

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A

1 2138	7 41 209	13 18 113
2 7315	8 51 783	14 316 160
3 30 304	9 32 235	15 567 185
4 625	10 6119	16 25 155
5 55 550	11 507 948	17 308 608
6 8165	12 167 481	18 287 149

B

1 183 351	7 378 029	13 4043 370
2 2 127 313	8 864 372	14 6962 525
3 528 800	9 619 153	15 209 897
4 100 204	10 506 117	16 417 460
5 69 084	11 127 314	
6 9 707 361	12 45 488	

C

1 431 047	7 2 639 879	13 14 349 239
2 8 109 141	8 941 442	14 63 775
3 240 325	9 3 711 724	15 59 773 280
4 12 114 963	10 11 252 246	16 5 087 580
5 760 381	11 519 640	
6 679 552	12 5 220 721	

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A

1 540	7 109 242	13 12
2 0-5	8 20 682	14 990
3 461	9 167 010	15 480
4 134	10 78 171	16 12
5 15	11 93 572	17 63
6 310	12 472 630	18 72

B

1 71 731	7 4-0	13 546
2 1 630 404	8 6900	14 152
3 804 810	9 144 473	15 8
4 4 039 048	10 4 711 856	16 150
5 150	11 297 852	
6 10 600	12 2 107 230	

C

1 13 030 176	7 70 525 784	13 79
2 35 165 011	8 3 508 951	14 741
3 5 079 923	9 5-875	15 5-4
4 8 556 122	10 1-35	16 42
5 19 336 430	11 0-45	
6 9 249 508	12 0-008	

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A

1 5, 10, 15, 20, 25, 30	9 Yes	17 a) 120
2 8, 16, 24, 32, 40, 48	10 No	b) 120
3 11, 22, 33, 44, 55, 66	11 Yes	
4 20, 40, 60, 80, 100, 120	12 Yes	
5 No	13 No	
6 Yes	14 Yes	
7 Yes	15 Yes	
8 No	16 No	

B

1 10, 20, etc.	9 18	17 12
2 14, 28, etc.	10 33	18 12
3 15, 30, etc.	11 12	19 12
4 24, 48, etc.	12 42	20 30
5 28, 56, etc.	13 12	21 8
6 30, 60, etc.	14 30	22 24
7 22, 44, etc.	15 24	23 18
8 21, 42, etc.	16 40	

C

1 12, 24, 36, etc.	9 26	17 30
2 18, 36, 54, etc.	10 28	18 60
3 33, 66, 99, etc.	11 55	19 28
4 20, 40, 60, etc.	12 20	20 84
5 35, 70, 105, etc.	13 60	21 24
6 24, 48, 72, etc.	14 75	22 120
7 36, 72, 108, etc.	15 24	23 48
8 30, 60, 90, etc.	16 144	

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A

1 1, 2, 3, 4, 6, 12	13 8, 9, 10
2 1, 2, 4, 7, 14, 28	14 18, 20
3 1, 5, 25	15 24, 25, 26
4 1, 2, 3, 5, 6, 10, 15, 30	16 32, 33, 34
5 1, 2, 4, 8, 16, 32	17 46, 48, 49
6 1, 3, 9, 27	18 56, 57, 58
7 1, 5, 11, 55	19 70, 72
8 1, 2, 3, 6, 9, 18	20 88, 90, 91
9 1, 2, 4, 5, 10, 20, 25, 50, 100	
10 1, 2, 3, 6, 9, 18, 27, 54	
11 1, 7, 49	
12 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60	
21 13, 17, 19, 23, 29, 31, 37, 41, 43, 47	

B

1 a) 1, 3	b) 3	7 a) 1, 2, 3, 4, 6, 12	b) 12
2 a) 1, 2, 4, 8	b) 8	8 a) 1, 2, 4, 5, 10, 20	b) 20
3 a) 1, 3, 5, 15	b) 15	9 a) 1, 2, 7, 14	b) 14
4 a) 1, 2, 3, 6	b) 6	10 a) 1, 2, 4, 8	b) 8
5 a) 1, 2, 4	b) 4	11 a) 1, 2, 3, 6	b) 6
6 a) 1, 3, 9	b) 9	12 a) 1, 2, 3, 4, 6, 12	b) 12
13 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97			
14 divisible by 2, etc.		18 divisible by 2, 10, etc.	
15 divisible by 3, etc.		19 divisible by 3, etc.	
16 divisible by 5, etc.		20 divisible by 7, etc.	
17 divisible by 7, etc.		21 divisible by 11, etc.	
22 $2 \times 5 \times 5$		26 $2 \times 2 \times 13$	
23 $2 \times 2 \times 3 \times 3$		27 $2 \times 2 \times 3 \times 11$	
24 $2 \times 2 \times 7$		28 $2 \times 3 \times 3 \times 5$	
25 $2 \times 2 \times 3 \times 5$		29 $2 \times 2 \times 2 \times 3 \times 3$	

C**1 a)** 1, 2, 4**2 a)** 1, 3, 5, 15, 25, 75**3 a)** 1, 2, 4, 8, 16**4 a)** 1, 3**5 a)** 1, 2, 4, 8**6 a)** 1, 2, 3, 6, 9, 18**7 a)** 1, 2, 3, 6**8 a)** 1, 3, 9**b)** 4**b)** 75**b)** 16**b)** 3**b)** 8**b)** 18**b)** 6**b)** 9**9** divisible by 11, etc.**10** divisible by 13, etc.**11** divisible by 3, etc.**12** divisible by 19, etc.**13** 101, 103, 107, 109**14** 131, 137, 139**15** 151, 157**16** 191, 193, 197, 199**17** $2 \times 2 \times 2 \times 5 \times 5$ **18** $2 \times 2 \times 2 \times 2 \times 3 \times 3$ **19** $2 \times 3 \times 3 \times 3 \times 3$ **20** $2 \times 2 \times 2 \times 3 \times 11$ **21** $2 \times 7 \times 13$ **22** $3 \times 5 \times 5 \times 5$ **23** $2 \times 2 \times 3 \times 3 \times 7$ **24** $2 \times 2 \times 2 \times 5 \times 11$