

Key Vocabulary

Factors

Prime Numbers

- multiply
- groups of
- lots of
- times
- divide
- share
- remainder

A factor is a number that divides into another number exactly, without leaving a remainder.

A common factor is a factor of 2 or more numbers.

The factors of 20 are 1, 2, 4, 5, 10 and 20.

The factor pairs are:
 1 and 20
 2 and 10
 4 and 5

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Squared and Cubed Numbers

Related Calculations

- factor
- multiple
- product

$2^2 = 4$
 $2 \times 2 = 4$

$2^3 = 8$
 $2 \times 2 \times 2 = 8$

$5^2 = 25$
 $5 \times 5 = 25$

$5^3 = 125$
 $5 \times 5 \times 5 = 125$

| | |
|---------------------|---------------------|
| $8 \times 9 = 72$ | $9 \times 8 = 72$ |
| $80 \times 9 = 720$ | $90 \times 8 = 720$ |
| $72 \div 9 = 8$ | $72 \div 8 = 9$ |
| $720 \div 9 = 80$ | $720 \div 8 = 90$ |

Short Multiplication

$$2543 \times 7 = 17801$$

| | | | | |
|----------|----------|----------|----------|----------|
| | 2 | 5 | 4 | 3 |
| x | | | | 7 |
| 1 | 7 | 8 | 0 | 1 |
| 1 | 3 | 3 | 2 | |

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

Long Multiplication

$$2543 \times 67 = 170381$$

| | | | | | |
|---|---|---|---|---|---|
| | | 2 | 5 | 4 | 3 |
| | x | | | 6 | 7 |
| | 1 | 7 | 8 | 0 | 1 |
| 1 | 5 | 2 | 5 | 8 | 0 |
| 1 | 7 | 0 | 3 | 8 | 1 |

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

Division

$$136 \div 4 = 34$$

| | | | | |
|---|--|----------|----------|---|
| | | 3 | 4 | |
| 4 | | 1 | 3 | 6 |
| - | | 1 | 2 | 0 |
| | | | 1 | 6 |
| | | - | 1 | 6 |
| | | | | 0 |

→ 30 × 4

→ 4 × 4

Short Division

| | | | | |
|---|--|----------|----------|---|
| | | 3 | 8 | |
| 4 | | 1 | 5 | 2 |

15 ÷ 4 = 3 remainder 3
Remember to regroup any remainders and move them into the next column.

| | | | | | | |
|---|--|----------|----------|----------|----------|----------|
| | | 4 | 5 | 5 | r | 3 |
| 5 | | 2 | 2 | 7 | 8 | |

28 ÷ 5 = 5 remainder 3
If your calculation has a remainder, remember to record it in the answer using the letter r.