Answers

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Number

Factors, multiples and primes

1 **a** 5 **b** 1, 12 **c** 1, 5, 45
2 HCF = 10, LCM = 1050
3 $2 \times 3^2 \times 5$
4 **a** 10 **b** 840
5 12 and 18

Ordering integers and decimals

1 **a** false **c** true **e** true
b true **d** true
2 −0.3, −1.5, −2.5, −4.2, −7.2
3 0.049, 0.124, 0.412, 0.442, 1.002
4 **a** < **b** < **c** >

Calculating with negative numbers

Stretch it! negative, yes

1 **a** −11 **c** −6 **e** 0
b 99 **d** 18 **f** 25
2 −8 and 9
3 32°C

Multiplication and division

Stretch it! 148 419

1 **a** 2115 **b** 56 364
2 **a** 47 **c** 126 remainder 4 or $126\frac{4}{17}$
b 516
3 **a** 33 boxes **b** 1 pencil
4 £91.25
5 £288
6 $307\frac{2}{3}$
7 28 805
8 37 boxes
9 He has not placed a zero in the ones column before multiplying through by 5.

Calculating with decimals

Stretch it! 18.2

1 **a** 2.33 **c** 0.035 **e** 1.563
b 24.391 **d** 6.099
2 £4.64
3 Erica: £54.92; Freya: £27.46

Rounding and estimation

Stretch it! **a** 1.0 **b** 1.00 **c** 1.000 – they are all 1

Stretch it! 55.25 m² – an overestimate.

1 **a** 0.35 **c** 32.6
b 10 **d** 33 100
2 **a** $150 \leq x < 250$ **c** $3.15 \leq x < 3.25$
b $5.5 \leq x < 6.5$ **d** $5.055 \leq x < 5.065$
3 $\frac{30}{0.5 \times 6} = 10$
4 b is false since $18 \times 1 = 18$ so 18×0.9 cannot be 1.62
c is false since if you divide by a number smaller than 1 the answer will be larger.
5 Tarik should choose One tariff.

Converting between fractions, decimals and percentages

Stretch it! $0.\dot{1}$, $0.\dot{2}$, $0.\dot{3}$, … $0.\dot{4}$, $0.\dot{5}$

1 **a** $\frac{32}{100} = \frac{8}{25}$ **c** $\frac{33}{100}$
b $1\frac{24}{100} = 1\frac{6}{25}$ **d** $\frac{95}{100} = \frac{19}{20}$
2 **a** $0.41\dot{6}$ **c** 0.49 **e** $0.\dot{4}28571\dot{4}$
b 0.375 **d** 0.185
3 **a** 91% **c** 80%
b 30% **d** 60%
4 37.5%
5 30%, 0.35, $\frac{2}{5}$
6 $\frac{15}{20} = \frac{75}{100} = 75\%$ – Amy
Rudi was highest

Ordering fractions, decimals and percentages

1 $\frac{7}{12}, \frac{3}{8}, \frac{1}{3}$
2 $-2.2, -\frac{1}{10}$, 1%, 0.1, 15%, $\frac{1}{5}$, 7 (so the middle is 0.1)
3 Yes, if the numerator of a fraction is $\frac{1}{2}$ the denominator the fraction is equivalent to $\frac{1}{2}$. If the numerator is smaller than this the fraction must be smaller than $\frac{1}{2}$.

Calculating with fractions

Stretch it! No, you could add the whole number parts then the fraction parts, giving:

$1 + 2 = 3$

$\frac{3}{5} + \frac{1}{4} = \frac{17}{20}$

$= 3\frac{17}{20}$

1 **a** $1\frac{5}{8}$ **c** $\frac{10}{21}$ **e** $\frac{2}{25}$
b $\frac{6}{17}$ **d** $8\frac{3}{20}$
2 **a** 12 **b** £35 **c** 808 mm
3 20
4 35

Percentages

1 **a** 1.8 cm **b** £0.30 **c** 4 ml
2 **a** 33 **b** 540 **c** £101.92
3 **a** 480 **b** 133 **c** £14.58
4 3052
5 £14 300