Maths Level 1

Key Topics Revision Guide

This guide covers the 10 topics that come up most in the Functional Skills Maths Level 1 exam.

1. Percentages
2. Fractions and Decimals
3. Ratio and Proportion
4. Mean, Median, Mode, Range
5. Area and Perimeter
6. Scale and Maps
7. Simple Interest
8. Best Value / Unit Pricing
9. Probability
10. Reading Timetables and Charts

1. Percentages

Find percentages of amounts, calculate increases/decreases, understand VAT.

Key methods: 10%=÷10 | 1%=÷100 | 5%=half of 10% | 20%=10%×2 | 15%=10%+5%

Decrease: £85, 20% off. 10%=£8.50, 20%=£17. Sale=£85-£17=£68

Increase (VAT): £2,280+20%. 10%=£228, 20%=£456. Total=£2,736

Practice: 1) 15% of £320 2) £450 reduced by 30% 3) Add 20% VAT to £185 4) £220,000 up by 8%

Answers: 1) £48 2) £315 3) £222 4) £237,600

2. Fractions and Decimals

Convert between fractions/decimals/percentages. Simplify. Find fractions of amounts.

Key: 1/2=0.5=50% | 1/4=0.25=25% | 3/4=0.75=75% | 1/5=0.2=20% | 1/10=0.1=10%

Fraction of amount: 3/8 of 240: 240÷8=30, 30×3=90

Simplify: 35/100: HCF=5. 35÷5=7, 100÷5=20. Answer: 7/20

Practice: 1) 5/6 of 180 2) Simplify 48/72 3) 0.45 as simplest fraction 4) Order: 0.4, 0.09, 0.41, 0.39

Answers: 1) 150 2) 2/3 3) 9/20 4) 0.09, 0.39, 0.4, 0.41

3. Ratio and Proportion

Simplify ratios, share amounts, scale recipes.

Simplify: 24:36. HCF=12. Answer: 2:3

Share: £180 in ratio 2:3:4. Total parts=9. One part=£20. Shares: £40, £60, £80

Scale recipe: 300g for 4 people. Per person: 75g. For 10: 750g

Practice: 1) Simplify 45:60 2) Share £600 in 1:2:3 3) 450g for 6, how much for 8? 4) Sand:cement 4:1, 20kg sand=? cement

Answers: 1) 3:4 2) £100, £200, £300 3) 600g 4) 5kg

4. Mean, Median, Mode, Range

Mean=total÷count | **Median**=middle (in order) | **Mode**=most common | **Range**=highest-lowest

Example: 72,58,81,65,74. Mean=350÷5=70. Median=72. Range=81-58=23

Practice: 1) Mean of 12,15,8,20,10 2) Median of 3,7,2,9,5,1,4 3) Mode of 4,7,2,7,3,7,5 4) Range of 22,35,18,41,29

Answers: 1) 13 2) 4 3) 7 4) 23

5. Area and Perimeter

Rectangle: Area=L×W | Perimeter=2(L+W) | **Triangle:** Area=½×base×height

Working backwards: `Perimeter=56, L=18. 56=2(18+w), 28=18+w, w=10cm`

Compound shape: `Split into rectangles. (10×6)+(4×3)=60+12=72m²`

Practice: 1) L=14,W=9 area+perimeter 2) Triangle base=12,h=8 area 3) Perimeter=48,W=7, find L 4) L-shape 8×5 + 3×2 area

Answers: 1) 126cm², 46cm 2) 48cm² 3) 17cm 4) 46m²

6. Scale and Maps

1:25,000 means 1cm on map = 25,000cm real = 250m = 0.25km

Map→Real: `8cm × 25,000 = 200,000cm = 2km`

Real→Map: `1.5km = 150,000cm ÷ 25,000 = 6cm`

Practice: 1) Scale 1:50,000, 4cm=?km 2) Scale 1:25,000, 3km=?cm 3) Scale 1:10,000, 7.5cm=?m

Answers: 1) 2km 2) 12cm 3) 750m

7. Simple Interest

Simple Interest = Principal × Rate × Time (interest is same each year)

Example: `£500 at 3% for 2 years. Per year: £15. Total interest: £30. In account: £530`

Practice: 1) £800 at 5% for 3yrs 2) £1,200 at 2.5% for 4yrs 3) £350 at 4% for 2yrs, total in account

Answers: 1) £120 2) £120 3) £378

8. Best Value / Unit Pricing

Price per unit = Total price ÷ Quantity. Lower = better value. Same units first!

Example: `A: 900g/£3.60=0.4p/g. B: 1500g/£5.25=0.35p/g. B is better value.`

Practice: 1) 200g/£4.80 vs 350g/£7.70 2) 1L/£1.20 vs 750ml/£0.82 3) 6 eggs/£1.50 vs 10 eggs/£2.30

Answers: 1) 350g jar (2.2p/g vs 2.4p/g) 2) 750ml (0.109p vs 0.12p) 3) Pack of 10 (23p vs 25p each)

9. Probability

P(event) = favourable outcomes ÷ total outcomes. Between 0 and 1.

Example: `3 red, 5 blue, 2 green. Total=10. P(blue)=5/10=1/2. P(not green)=8/10=4/5`

Practice: 1) Dice P(even) 2) 4 red, 6 blue, 2 yellow. P(yellow)? 3) Cards P(heart) 4) Spinner 3red,2blue,3green P(not red)

Answers: 1) 1/2 2) 1/6 3) 1/4 4) 5/8

10. Reading Timetables and Charts

Pie chart angle: (frequency ÷ total) × 360°

Example: 12 out of 60 chose rugby. Angle = (12÷60)×360 = 72°

Journey time: 09:30→11:03. 30+60+3 = 93 min = 1hr 33min

Practice: 1) 15/40 on pie chart angle 2) 14:45→16:12 duration 3) Bar chart Q1=120,Q2=95,Q3=140,Q4=185 range

Answers: 1) 135° 2) 1hr 27min 3) 90