

Year 8 • Marking & next steps

One mark per question; total 40. Accept equivalent exact answers and equivalent units unless the question requests a particular form. For Q33 in Year 7, require all five faces. No partial marks in this simple classroom scheme. These marks do not convert to SMART scores or curriculum levels.

Suggested use: one 50-minute practice, or two 20-question sessions. Confirm calculator and support arrangements to match your planned test. Mark first, then model missed questions; have students explain the correction before returning to the matching SMART Mastery skill on the website.

Keep this guide separate from student copies. The website is currently public; its teacher-guide disclosure is for convenience, not access protection.

Quick answer key

01 B • -6°C	21 A • \$3.50
02 D • Add 7	22 A • $1/20$
03 A • \$48	23 0.3 kg
04 D • 0.6 L	24 B • 680 g
05 A • 9	25 A • 44°
06 C • 2.45 km	26 27
07 C • $3/4$	27 A • 3261
08 B • 19	28 A • 1.2 km
09 A • 4 200 g	29 C • North-east
10 D • 8.652	30 23 cm
11 C • 18	31 D • $8x + 4$
12 D • $7/20$	32 A • \$22
13 0.72	33 B • \$23.50
14 (3, -2)	34 B • \$87
15 C • 120 cm^3	35 C • $2^2 \times 3 \times 5$
16 D • Mass of a school bag	36 B • 30
17 B • $6 \times 10^{-1} + 7 \times 10^{-2}$	37 C • 12
18 A • 54 cm^2	38 1 080
19 28	39 85 minutes
20 135°	40 96

01 • Ordering integers

B — -6°C

The lowest value lies furthest left on the number line.

02 • Additive sequences

D — Add 7

The difference between consecutive terms is 7.

03 • Multiplying decimals

A — \$48

$$0.48 \times 100 = 48.$$

04 • Reading a capacity scale

D — 0.6 L

The level is at the sixth tenth-litre interval above zero.

05 • Square roots

A — 9

$$9 \times 9 = 81.$$

06 • Length conversion

C — 2.45 km

Divide by 1 000.

07 • Simplifying fractions

C — $\frac{3}{4}$

Divide numerator and denominator by their common factor 14.

08 • Substitution

B — 19

$$4 \times 3 + 7 = 19.$$

09 • Multiplicative context

A — 4 200 g

$$120 \times 35 = 4\,200 \text{ g.}$$

10 • Decimal subtraction

D — 8.652

Write $9.000 - 0.348$ and align place values.

11 • Stacked bar graphs

C — 18

The upper segments have heights 4, 8 and 6. Their sum is 18.

12 • Percent to fraction

D — $7/20$ $35/100$ simplifies by dividing both numbers by 5.

13 • Probability complement

0.72

$$1 - 0.28 = 0.72.$$

14 • Rotation

(3, -2)

For a clockwise quarter-turn about the origin, (x, y) becomes (y, -x).

15 • Prism volume

C — 120 cm^3

$$\text{Volume} = \text{cross-sectional area} \times \text{length} = 15 \times 8.$$

16 • Continuous data

D — Mass of a school bag

Measured mass can take any value in a range. Counts are discrete; colours are categories.

17 • Negative powers of ten

$$B = 6 \times 10^{-1} + 7 \times 10^{-2}$$

6 tenths plus 7 hundredths equals 0.67.

18 • Parallelogram area

$$A = 54 \text{ cm}^2$$

Base $\times$ perpendicular height $= 9 \times 6 = 54 \text{ cm}^2$. Do not use the sloping side.

19 • Two-step equations

28

Subtract 9 to get $t/4 = 7$. Multiply by 4.

20 • Regular polygon angles

135°

Sum $= (8 - 2) \times 180 = 1\,080^\circ$. Divide by 8. Accept $180 - 360/8$.

21 • Money equations

$$A = \$3.50$$

$$(17 - 3) \div 4 = 3.50.$$

22 • Fraction in context

$$A = 1/20$$

$$40/800 = 1/20.$$

23 • Combined mass conversion

0.3 kg

$$140 + 85 + 75 = 300 \text{ g} = 0.3 \text{ kg}.$$

24 • Recipe scaling

$$B = 680 \text{ g}$$

$$96 \div 12 = 8 \text{ batches}; 85 \times 8 = 680 \text{ g}.$$

25 • Triangle angle reasoning

A — 44°

$$180 - 68 - 68 = 44^\circ.$$

26 • Forming an equation

27

Let $A = x$. Then $x + 2x + (2x + 9) = 144$; $5x = 135$; $x = 27$.

27 • Four-figure grid reference

A — 3261

The camp is in the square immediately right of easting 32 and above northing 61.

28 • Map scale

A — 1.2 km

$$6 \times 20\,000 = 120\,000 \text{ cm} = 1\,200 \text{ m} = 1.2 \text{ km}.$$

29 • Compass rotation

C — North-east

Move six 45° steps clockwise from south-east.

30 • Linear extrapolation

23 cm

It loses 4 cm each hour. From hour 3 to hour 7: $39 - 4 \times 4 = 23 \text{ cm}$.

31 • Algebraic perimeter

D — $8x + 4$

$$2x + 2(3x + 2) = 8x + 4.$$

32 • Rate from a cost table

A — \$22

Each additional hour increases the cost by \$22. The fixed fee is \$50.

33 • Repeated shared costs

B — \$23.50

$$94 \times 5 \div 20 = 23.50.$$

34 • Percentage reduction

B — \$87

One quarter of \$116 is \$29. Subtract: $\$116 - \$29 = \$87$.

35 • Prime factor division

C — $2^2 \times 3 \times 5$ $12 = 2^2 \times 3$, so cancel two factors of 2 and one factor of 3.

36 • Experimental proportions

B — 30

Cockle proportion = $6/30 = 1/5$. One fifth of 150 is 30.

37 • Combining means

C — 12

$$\text{Total} = 18 + 4 \times 10.5 = 60. \text{ Mean} = 60 \div 5 = 12.$$

38 • Area-based estimation

1 080

$$\text{Area} = 36 \text{ m}^2. \text{ Estimate} = 36 \times 30 = 1\,080 \text{ shells.}$$

39 • Mixed-number durations

85 minutes

$$5 \frac{1}{4} \text{ hours} = 315 \text{ minutes; } 3 \frac{5}{6} \text{ hours} = 230 \text{ minutes. Difference} = 85 \text{ minutes.}$$

40 • Sharing a ratio total

96

$$7 \text{ parts} = 168, \text{ so } 1 \text{ part} = 24; 4 \text{ parts} = 96.$$

Turn the results into a short teaching plan

Number & proportional thinking

Check place value and unit size before reteaching procedures. Ask learners to estimate first and use fraction bars, ratio tables or a number line.

Algebra

Model what the letters represent. Keep equations balanced and collect only like terms. Ask students to substitute their answer to check it.

Measurement & geometry

Separate perimeter, area and volume; label units. Trace outside edges, mark perpendicular heights, and physically turn or reflect a shape.

Statistics & probability

Read axes and keys before calculating. Distinguish a segment from a stacked total. Use total frequency as the denominator and combine means through totals.

Reteach and check transfer

Choose two or three common gaps. Use Learn → Independent Match → Transfer Check in SMART Mastery, then ask a fresh question without scaffolds.

Teacher record: _____

Priority skills: _____

Students for follow-up: _____

Date of fresh check: _____