

Readiness Check

Two sections, about 30 minutes. Section A covers ideas your child met in primary school. Section B is where a child ends up after completing the Booster Course. The course is for students who find Section A easy but Section B challenging. Answer scheme: simpletocomplex.com/readiness-check-answers.pdf

Section A — the foundations

A1 Convert 0.5 to a fraction in its simplest form.

A $\frac{1}{5}$

B $\frac{1}{2}$

C $\frac{5}{10}$

D $\frac{5}{100}$

A2 Work out $\frac{1}{6} + \frac{1}{6}$, giving your answer as a fraction in its simplest form.

A $\frac{2}{12}$

B $\frac{1}{6}$

C $\frac{2}{6}$

D $\frac{1}{3}$

A3 Work out $0.2 + \frac{3}{5}$, giving your answer as a fraction.

A $\frac{4}{5}$

B $\frac{5}{5}$

C $\frac{4}{10}$

D $\frac{5}{15}$

A4 Work out $4\frac{3}{4} - 1\frac{1}{2}$, giving your answer as a mixed number.

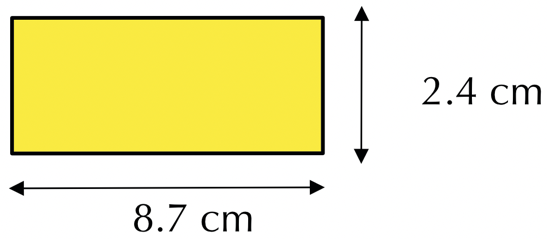
A $3\frac{1}{2}$

B $3\frac{1}{4}$

C $4\frac{1}{4}$

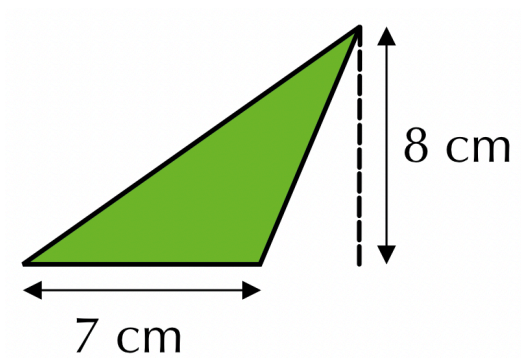
D 5

- A5** Calculate the perimeter of the rectangle, which is 8.7 cm long and 2.4 cm high.



- A** 10.11 cm **B** 11.1 cm
C 20.22 cm **D** 22.2 cm
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- A6** Calculate the area of the triangle, which has a base of 7 cm and a perpendicular height of 8 cm.



- A** 15 cm² **B** 28 cm²
C 56 cm² **D** 108 cm²
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- A7** Work out $3 - 7$.

- A** 4 **B** -4
C 10 **D** -10
-

- A8** Work out $-4 + 8$.

- A** 4 **B** -4
C 12 **D** -12
-

- A9** Find 12 more than -12.

- A** -24 **B** 0
C 12 **D** 24
-

A10 Write £5 to 40 pence as a ratio in its simplest form.

A 5 : 40

B 1 : 8

C 25 : 2

D 500 : 40

Section B — where the course leads

B1 Calculate.

$$8^{0.8} \times 8^{\frac{6}{5}}$$

A 2

B 16

C 64

D 4096

B2 Two distinct square numbers add together to give another square number. Identify the two square numbers.

A 4 and 9

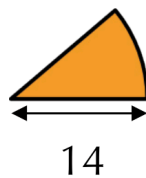
B 9 and 16

C 16 and 25

D 25 and 36

B3 The sector shown is one ninth of a circle of radius 14. Find the length of its arc, correct to 2 decimal places (calculator allowed).

One ninth
of a circle



A 4.89

B 9.77

C 68.42

D 87.96

B4 Expand and simplify $8 - (2d + 5)$.

A $3 - 2d$

B $3 + 2d$

C $13 - 2d$

D $13 + 2d$

B5 Find the value of n that makes this statement true: $13^2 - 5^2 = n^2 \times 2^2$.

A 6

B 8

C 12

D 36

B6 Fill the two blanks to make the statement true: $6^2 - \underline{\hspace{1cm}}^3 = 5^2 - \underline{\hspace{1cm}}^2$.

A 3 and 2

B 3 and 4

C 4 and 3

D 9 and 16

B7 Find, to 1 decimal place, the radius of a circle with circumference 106.8 cm (calculator allowed).

A 8.5 cm

B 17.0 cm

C 34.0 cm

D 53.4 cm

B8 Simplify $5^8 \div 5^{-2}$.

A 5^6

B 5^{10}

C 5^{16}

D 5^{-16}

B9 Simplify.

$$\frac{1}{5}w^{2.81} \times 30w^{4.19}$$

A $6w^7$

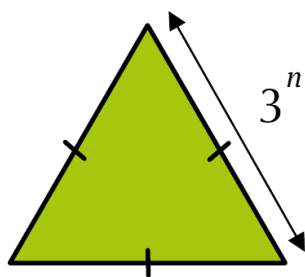
B $6w^{11.78}$

C $30w^7$

D $150w^7$

- B10** An equilateral triangle has sides of length 3^n , and a perimeter of 3 to the power $4\frac{3}{4}$. Find the value of n .

Equilateral
Triangle



A $1\frac{3}{4}$

C $4\frac{3}{4}$

B $3\frac{3}{4}$

D $5\frac{3}{4}$