

Foundation tier unit 18a check in test

Non-calculator

Q1. Work out $2\frac{2}{3} + 1\frac{3}{4}$

Q2. Work out $7\frac{1}{2} - 4\frac{2}{3}$

Q3. Work out $3\frac{1}{3} \cdot 4\frac{2}{5}$

Give your answer as a mixed number in its simplest form.

Q4. Work out $3\frac{1}{2} \div 4$

Q5. Work out $6 \div \frac{7}{8}$

Q6. What is the reciprocal of 5?

Q7. What is the reciprocal of $\frac{1}{3}$?

Q8. Work out the reciprocal of 0.125

Q9. Work out the reciprocal of 2.5

Q10. x is a number.

$$x \neq 0.$$

x is multiplied by its reciprocal.

Which of these is the correct answer?

$$x \qquad 0 \qquad 1 \qquad \frac{1}{x}$$

Topics listed in objectives

- Add and subtract mixed number fractions;
- Multiply mixed number fractions;
- Divide mixed numbers by whole numbers and vice versa;
- Find the reciprocal of an integer, decimal or fraction;
- Understand ‘reciprocal’ as multiplicative inverse, knowing that any non-zero number multiplied by its reciprocal is 1 (and that zero has no reciprocal because division by zero is not defined).

Answers

Q1. $4\frac{5}{12}$

Q2. $2\frac{5}{6}$

Q3. $14\frac{2}{3}$

Q4. $\frac{7}{8}$

Q5. $6\frac{6}{7}$

Q6. $\frac{1}{5}$

Q7. 3

Q8. 8

Q9. $\frac{2}{5}$

Q10. 1

Foundation tier unit 18b check in test

Non-calculator questions 1–8

Calculator questions 9–10

Q1. Write $5^5 \div 5^{-4}$ as a single power.

Q2. Write $7^{\frac{1}{2}} \cdot 7^{\frac{1}{4}}$ as a single power.

Q3. Write $(3^2)^4$ as a single power.

Q4. Find the value of $3^3 \times 10^0$.

Q5. Write 8.2×10^5 as an ordinary number.

Q6. Write 0.000 376 in standard form.

Q7. Work out the value of $(7.5 \times 10^4) \times (2 \times 10^3)$

Give your answer in standard form.

Q8. Work out the value of $(2.3 \times 10^{12}) \div (4.6 \times 10^3)$

Give your answer in standard form.

Q9. Work out $\frac{(4 \cdot 10^9) + (3.2 \cdot 10^8)}{1.6 \cdot 10^6}$

Give your answer in standard form.

Q10. Work out $\frac{(2.6 \cdot 10^7) (5 \cdot 10^6)}{2.8 \cdot 10^3}$

Give your answer in standard form.

Topics listed in objectives

- Use index laws to simplify and calculate the value of numerical expressions involving multiplication and division of integer powers, fractions and powers of a power;
- Use numbers raised to the power zero, including the zero power of 10;
- Convert large and small numbers into standard form and vice versa;
- Add, subtract, multiply and divide numbers in standard form;
- Interpret a calculator display using standard form and know how to enter numbers in standard form.

Answers

Q1. 5^9

Q2. $7^{\frac{3}{4}}$

Q3. 3^8

Q4. 27

Q5. 820 000

Q6. 3.76×10^{-4}

Q7. 1.5×10^8

Q8. 5×10^8

Q9. 2.7×10^3

Q10. 7.5×10^9