NAME

Time:

Non-Calculator Questions

8th

1 Work out

a $2\frac{1}{5} \times 3\frac{3}{4}$

Give your answer as a mixed number.

(2 marks)

b $3\frac{1}{8} \div 1\frac{1}{4}$

Give your answer as a mixed number.

(2 marks)

8th

3 Write each number as an ordinary number.

a 5.07×10^4

(1 mark)

b 3.8×10^{-5}

(1 mark)

9th

5 $x = 3$

Work out the value of

a x^0

(1 mark)

b x^1

(1 mark)

c x^{-1}

(1 mark)

d $(x^2)^{-1}$

(1 mark)

7 Work out

a $\left(\frac{2}{3}\right)^3$

(1 mark)

b $\left(\frac{1}{5}\right)^{-2}$

(2 marks)

9 The area of a rectangular piece of notepaper is $9\frac{1}{6}$ inches^2.

The width of the notepaper is $2\frac{3}{4}$ inches.

Work out the length of the notepaper.

Give your answer in its simplest form.

(3 marks)

Calculator Questions

11 **a** Finn worked out $2\frac{4}{7}\times 3\frac{1}{5}$

He wrote,

$2 \times 3 = 6$ and $\frac{4}{7}\times\frac{1}{5}=\frac{4}{35}$

so, $2\frac{4}{7}\times 3\frac{1}{5}=6\frac{4}{35}$

Finn's answer of $6\frac{4}{35}$ is wrong.

Explain **one** mistake that Finn made.

(1 mark)

b Finn then worked out $4\frac{1}{5}\div 2\frac{1}{3}$

He wrote,

$\frac{21}{5}\div\frac{7}{3}=\frac{5}{21}\times\frac{3}{7}=\frac{15}{147}$

Finn's answer of $\frac{15}{147}$ is wrong.

Explain **one** mistake that Finn made.

(1 mark)

13 Work out $\dfrac{\left(4.3\times10^{6}\right)-\left(7\times10^{5}\right)}{2.5\times10^{-4}}$

Give your answer in standard form.

(2 marks)

15 A sphere has a radius of 1.35×10^{-7} mm.

a By using 1 significant figure for your values, work out an estimate, in mm^2, for the surface area of the sphere.

Give your answer in standard form to 1 decimal place.

Surface area of a sphere $= 4\pi r^2$

(2 marks)

b Without further calculations, give evidence to show whether your method gives you an underestimate or an overestimate for the surface area of the sphere.

(1 mark)

17 Work out the reciprocal of 0.0005.

Give your answer in standard form.

(1 mark)

19 A company produces photocopier paper with a thickness of 8.6×10^{-3} cm.

The paper is sold in reams of 500 sheets.

A drawer has a depth of 14 cm.

Work out how many full reams of paper will fit in the drawer.

You must show your working.

(3 marks)

Overall mark	**/27**