

# Delta 2

## Unit 6 Review (Calculator)

### Fractions, Decimals and Percentages

How well did you do:

|                                   |                            |  |
|-----------------------------------|----------------------------|--|
| Fractions, Decimals & Percentages | Score = $\frac{\quad}{45}$ |  |
|-----------------------------------|----------------------------|--|

| <b><i>Topics/skills which need to be revisited:</i></b>                                                                                                                                                          | <b><i>Question from the review</i></b>                                                   | <b><i>Further practice from Delta 2</i></b>                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Recognising fractions equivalent to recurring decimals</li> <li>• Writing recurring decimals as fractions</li> <li>• Writing fractions as recurring decimals</li> </ul> | <ul style="list-style-type: none"> <li>• 1a,b</li> <li>• 2a,b</li> <li>• 3a,b</li> </ul> | <ul style="list-style-type: none"> <li>• P145 Q13</li> <li>• P139 Q5-8</li> <li>• P139 Q3,4</li> </ul>      |
| <ul style="list-style-type: none"> <li>• Finding a percentage increase (gain) or decrease (loss)</li> <li>• Finding a percentage error</li> </ul>                                                                | <ul style="list-style-type: none"> <li>• 4, 8</li> <li>• 6</li> </ul>                    | <ul style="list-style-type: none"> <li>• P141 Q1-5</li> <li>• same method as % increase/decrease</li> </ul> |
| <ul style="list-style-type: none"> <li>• Finding the original amount before a percentage change</li> <li>• Solving longer problems involving percentages</li> </ul>                                              | <ul style="list-style-type: none"> <li>• 5,9</li> <li>• 11</li> </ul>                    | <ul style="list-style-type: none"> <li>• P140-1 Q6-9</li> <li>• P144 Q8</li> </ul>                          |
| <ul style="list-style-type: none"> <li>• Increase or decrease by a percentage</li> </ul>                                                                                                                         | <ul style="list-style-type: none"> <li>• 7</li> </ul>                                    | <ul style="list-style-type: none"> <li>• P140 Q1-5</li> </ul>                                               |
| <ul style="list-style-type: none"> <li>• Finding the amount after repeated percentage change</li> </ul>                                                                                                          | <ul style="list-style-type: none"> <li>• 10</li> </ul>                                   | <ul style="list-style-type: none"> <li>• P142 Q6-11</li> </ul>                                              |

1. a) Which of these fractions will give recurring decimals?

$$\frac{n}{5}, \frac{n}{3}, \frac{n}{11}, \frac{n}{10}, \frac{n}{25}, \frac{n}{6}$$

- b) Complete the gaps in this table, with exact answers

|               |     |               |     |
|---------------|-----|---------------|-----|
| $\frac{1}{3}$ |     | $\frac{1}{9}$ |     |
|               | 0.6 |               | 0.5 |

(6 marks)

2. Write these recurring decimals as fractions, using an algebraic method and showing all working.

a)  $0.\dot{2}\dot{7}$

b)  $0.18\dot{6}$

(4 marks)

3. Write these fractions as recurring decimals.

(you must show how you worked out your answers using a non-calculator method)

a)  $\frac{5}{11}$

b)  $\frac{7}{12}$

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(4 marks)

4. Form 8B were investigating how a metal bar expands while being heated. The bar was originally 30cm in length and it expanded to 31.75cm.

Calculate the percentage increase in length. Give your answer correct to 1 decimal place.

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(3 marks)

5. Mr Bell bought a freezer in a sale where all goods were 20% off. He saved £49. What was the original price of the freezer?

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(2 marks)

6. A bicycle wheel's circumference is 81.6cm (to 3 significant figures). Paul estimated the circumference to be 72cm.

Use the following formula to find Paul's percentage error, to 1 dp.

$$\text{Percentage error} = \frac{\text{actual error}}{\text{correct length}} \times 100\%$$

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(3 marks)

7. a) Increase £840 by 12%

- b) Decrease £645 by 14%

- c) Increase £450 by  $7\frac{1}{2}\%$

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(6 marks)

8. Andy bought a car for Dh75,000 and sold it for Dh25,000. What is Andy's percentage loss? Answer to 1 d.p.

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(3 marks)

9. In a '15%' off sale, Freya bought a DVD player for £179.99. What was the original price of this DVD player?

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**(3 marks)**

10. The number of dragonflies around a lake is expected to decrease by 8% per year. At the end of 2010 there were 145 dragonflies.

a) How many dragonflies were there predicted to be at the end of 2011?

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b) How many dragonflies were there predicted to be at the end of 2014?

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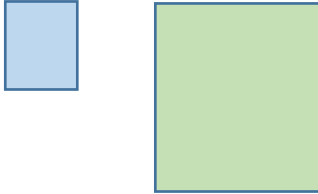
c) At the end of which year will the number of dragonflies fall below 80?

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**(8 marks)**

11. The perimeter of a large square is 20% greater than the perimeter of a smaller square.

Work out the length of one side of the smaller square if the perimeter of the large square is 36cm.



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(3 marks)

**[End of Review]**