

Name: \_\_\_\_\_

**ASM Tuition Academy**  
**Recurring Decimals to Fractions**

**Instructions:**

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided  
- there may be more space than you need.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all you're working out**.

**Information:**

- The marks for each question are shown in brackets  
- use this as a guide as to how much time to spend on each question.

**Advice:**

- Read each question carefully before you start to answer it.
- Keep an eye on time.
- Try to answer every question.
- Check your answers if you have time at the end.

**1. Covert  $3 / 9$  to a decimal.**

---

**(Total for question 1 is 2 marks)**

---

**2. Covert  $6 / 11$  to a decimal.**

---

**(Total for question 2 is 2 marks)**

---

**3. Covert  $1 / 6$  to a decimal.**

---

**(Total for question 3 is 2 marks)**

---

4. Prove algebraically that the recurring decimal  $0.\dot{7}$  can be written as  $7 / 9$

---

(Total for question 4 is 2 marks)

---

5. Prove algebraically that the recurring decimal  $0.4\dot{8}$  can be written as  $22 / 45$ .

---

(Total for question 5 is 2 marks)

---

6. Prove algebraically that the recurring decimal  $0.2\dot{1}$  can be written as  $19 / 90$

---

(Total for question 6 is 2 marks)

---

7. Write  $0.1\dot{9}$  as a fraction in its simplest form.

---

(Total for question 7 is 2 marks)

---

8. Write  $0.3\dot{3}$  as a fraction in its simplest form.

---

(Total for question 8 is 2 marks)

---

9. Write  $0.4\dot{9}$  as a fraction in its simplest form.

---

(Total for question 9 is 2 marks)

---

10. Prove algebraically that the recurring decimal  $0.2\dot{3}4$  can be written as  $116 / 495$ .

---

(Total for question 10 is 2 marks)

---

11. Prove algebraically that the recurring decimal  $0.48\dot{3}$  can be written as  $161 / 999$ .

---

(Total for question 11 is 2 marks)

---

12. Prove algebraically that the recurring decimal  $0.\dot{3}1\dot{5}$  can be written as  $105 / 333$ .

---

(Total for question 12 is 2 marks)

---

13. Write  $4.8\dot{2}\dot{3}$  as a fraction in its simplest form.

---

(Total for question 13 is 2 marks)

---

14. Write  $2.6\dot{5}\dot{1}$  as a fraction in its simplest form.

---

(Total for question 14 is 2 marks)

---

15. Write  $1.4\dot{1}\dot{3}$  as a fraction in its simplest form.

---

(Total for question 15 is 2 marks)

---

**16.  $x$  is an integer such that  $1 \leq x \leq 9$ .  
Prove that  $0.\dot{0}\dot{x} = x / 99$**

---

**(Total for question 16 is 2 marks)**

---

**17. Work out:  $0.\dot{6}\dot{2} \times 0.\dot{6}$**

---

**(Total for question 17 is 4 marks)**

---

**18. Work out:**  $0.\dot{2}1 \div 0.\dot{2}4$

---

**(Total for question 18 is 4 marks)**

---

**19. Work out:**  $0.0\dot{9} \div 0.\dot{1}54$

---

**(Total for question 19 is 4 marks)**

---