

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

**ASM Tuition Academy**  
**Repeated Percentage Change**

**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. A population of bacteria is increasing by 10% each hour.  
Find the percentage increase in the population every 2 hours.

---

(Total for question 1 is 2 marks)

---

2. A shop decreases price by 10% and then by a further 20%.  
Zohaib says: "Price have now decreased by 25%".

Is Zohaib correct?

You must show your working.

---

(Total for question 2 is 2 marks)

---

3. Pareeshay invests some money for 3 years in a savings account.  
She gets 5% per annum compound interest.  
Pareeshay has £4250.45 at the end of 3 years, work how much she invested?

---

(Total for question 3 is 3 marks)

---

4. Anabiya invests some money for 5 years in a savings account.  
She gets 2% per annum compound interest.  
Anabiya has £2570.64 at the end of 5 years, work how much she invested?

---

(Total for question 4 is 3 marks)

---

5. Ali invests £3500 for 4 years in a savings account.  
He gets 4% annum compound interest in the 1<sup>st</sup> year, then  $x\%$  for 2 years.  
Ali has £3800.96 at the end of 2 years, work out the value of  $x$ .

---

(Total for question 5 is 4 marks)

---

6. Azan invests £4000 for 3 years in a savings account.  
He gets 2% annum compound interest in the 1<sup>st</sup> year, then  $x\%$  for 3 years.  
Ali has £5238.74 at the end of 3 years, work out the value of  $x$ .

---

(Total for question 6 is 4 marks)

---

7. A population model assumes that the number of people living in Stover ton is increasing by  $x\%$  each year.

The population is expected to increase by 50% in 5 years, work out the value of  $x$ .  
Give your answer to 1 decimal place.

---

(Total for question 7 is 3 marks)

---

8. A chair's value is decreasing by  $x\%$  each year.  
The chair will half in value in 4 years, work out the value of  $x$ .  
Give your answer to 1 decimal place.

---

(Total for question 8 is 3 marks)

---

9. The number of hens in a field is increasing by  $x\%$  each year.  
The population is expected to double in 7 years, work out the value of  $x$ .  
Give your answer to 1 decimal place.

---

(Total for question 9 is 3 marks)

---

10. A car's value is decreasing by  $x\%$  each year.  
The car's will decreased by 40% in 4 years, work out the value of  $x$ .  
Give your answer to 2 decimal place.

---

(Total for question 10 is 3 marks)

---

- 11. A circle's radius is increased by 9%.  
Find the increase in the circle's area.**

---

**(Total for question 11 is 4 marks)**

---

- 12. A circle's area is increased by 4%.  
Find the increase in the circle's radius.**
- Give your answer to 3 significant figures.**

---

**(Total for question 12 is 4 marks)**

---

**13. A cube's length is increased by 14%.  
Find the increase in the cube's volume.**

**Give your answer to 3 significant figures.**

---

**(Total for question 13 is 4 marks)**

---

**14. A cube's volume is increased by 22%.  
Find the increase in the cube's length.**

**Give your answer to 3 significant figures.**

---

**(Total for question 14 is 4 marks)**

---