3. Ratio, proportion and rates of change

Starter Quiz ·

AQA · GCSE · Mathematics

Name: _____ Score: _____

1. A price of 80 rises by 15%. Find the new price.

   _____

2. A 25% discount leaves a price of 90. Find the original price.

   _____

3. Find concentrate in a 700 ml mixture at concentrate:water=2:5.

   _____

4. At 1:25000, find the real length in km for 4 cm.

   _____

5. Use C=3L to find C for L=6.

   _____

6. Direct proportion needs a straight line through the origin.

   ☐ True ☐ False

7. Converting density from g/cm^3 to kg/m^3 leaves its numerical value unchanged.

   ☐ True ☐ False

8. Volume scales by the cube of the length factor.

   ☐ True ☐ False

9. Simple and compound interest give the same balance after two years.

   ☐ True ☐ False

10. Depositing before interest gives the same result as depositing after interest.

    ☐ True ☐ False

3. Ratio, proportion and rates of change

Answers ·

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1. **92.0**

   Multiply by 1.15: 80×1.15=92.

2. **120.0**

   The sale price is 75% of the original: 90/0.75=120.

3. **200.0**

   700/(2+5)×2=200 ml.

4. **1.0**

   4×25000/100000=1 km.

5. **18.0**

   Substitute L=6: C=18.

6. **True**

   True. Direct proportion needs a straight line through the origin; y=2x+3 is not direct proportion.

7. **False**

   1 g/cm^3=1000 kg/m^3, so the number changes by a factor of 1000.

8. **True**

   True. Volume scales by the cube of the length factor: doubling lengths makes the volume 8 times larger.

9. **False**

   Compound interest also earns interest on interest, so after two years its balance is larger.

10. **False**

    A deposit made before interest earns interest for that period, so the balance is larger.