UNIT 19 Similarity   Mental Tests

M 19.1 Standard Route *(no calculator)*

You will need the Information Sheet for questions 7 – 10.

1. A rectangle has sides of lengths 3 cm and 8 cm. What is its area? $(24 \ cm^2)$

2. Calculate 3^2.   (9)

3. Calculate 2^3.   (8)

4. Calculate 5^2.   (25)

5. Calculate 3^3.   (27)

6. A line has length 8 cm. What is its new length if it is enlarged
    with scale factor 4 ?   (32 cm)

7. Is rectangle B an enlargement of rectangle A ?   (No)

8. Rectangle A is enlarged to give rectangle C. What is the scale factor
    of the enlargement?   (2)

9. How many copies of rectangle A could be fitted into rectangle C ?   (4)

10. Rectangle D is an enlargement of rectangle A. What is the scale factor
    of the enlargement?   (3)

M 19.2 Academic Route *(no calculator)*

You will need the Information Sheet for questions 8 – 10.

1. Calculate 10^3.   (1000)

2. Calculate 6^2.   (36)

3. Calculate 5^3.   (125)

4. Calculate 4^3.   (64)

5. Calculate 100^3.   (1 000 000)

6. A line has length 6.5 cm. It is enlarged with scale factor 4. What is the
    new length of the line?   (26 cm)

7. A rectangle has area 5 cm^2. It is enlarged with scale factor 4. What is
    the area of the enlarged rectangle? $(80 \ cm^2)$

8. Which rectangle is *not* an enlargement of rectangle A ?   (B)

9. Rectangle D is an enlargement of rectangle A. What is the scale factor
    of the enlargement?   (3)

10. How many times greater than the area of rectangle A is the area of rectangle D ?   (9)

UNIT 19 Similarity   Mental Tests

M 19.3 Express Route *(no calculator)*

You will need the Information Sheet for questions 8 – 10.

1.   Calculate 20^2.   (400)

2.   Calculate 30^3.   (27 000)

3.   Calculate 15^2.   (225)

4.   Calculate 100^3.   (1 000 000)

5.   Calculate 50^3.   (125 000)

6.   The perimeter of a triangle is 18.2 cm. The triangle is enlarged with
     scale factor 6. What is the perimeter of the enlarged triangle?   (109.2 cm)

7.   A box has a volume of 80 cm^3. It is enlarged with scale factor 5.
     What is the volume of the enlarged box?   (10 000 cm^3)

8.   Which shape is *not* an enlargement of rectangle A ?   (B)

9.   Rectangle D is an enlargement of rectangle C. What is the scale factor
     of the enlargement? $(1\frac{1}{2})$

10. How many times bigger than the area of rectangle C is the area of rectangle D ? $(\frac{9}{4})$

UNIT 19 Similarity

Mental Tests

Information Sheet