Sidcot School Mathematics Entry Test (NC Years 7-9)

Name: _____ **(please print)**

Age: _____ **(years)**

Time Allowed: 1 Hour

Instructions to Candidates

You may **not** use a calculator

Write your name in the space provided at the top of this page

Answer all questions

Show all your working. In many questions, marks will be given for the correct method, even if your answer is incorrect

Equipment Needed

Pen or pencil

Signed: …… Date:……

I confirm that the answers on this test paper are all my own work and were completed under examination conditions.

1. **65 + 327**

_____

_____

_____

_____

Answer _____

2. **1037 - 672**

_____

_____

_____

_____

Answer _____

3. **352 × 7**

_____

_____

_____

_____

Answer _____

4. **13512 ÷ 6**

_____

_____

_____

_____

Answer _____

5. **3291 × 34**

_____

_____

_____

_____

_____

_____

Answer _____

6. **9804 ÷ 38**

_____

_____

_____

_____

_____

_____

Answer _____

7. **½ + ¾**

_____

_____

_____

_____

Answer _____

8. **9.2 - 0.56**

_____

_____

_____

_____

Answer _____

9. **12 % of 320**

_____

_____

_____

_____

Answer _____

10. (a) 2^{-2} = _____

(b) 7^{0} = _____

(c) $9^{\frac{1}{2}}$ = _____

11. **6 + 5 × 3 =**

Answer _____

12. **23 - 37 =**

Answer _____

13. Write down the next two numbers:

(a) **3, 7, 11, 15, 19, _____, _____**

(b) **1, 2, 4, 8, 16, _____, _____**

(c) **2.4, 2.5, 2.6, 2.7, 2.8, _____, _____**

(d) **1, 4, 9, 16, 25, _____, _____**

(e) **1, 1, 2, 3, 5, 8, _____, _____**

(f) **1, 3, 6, 10, 15, _____, _____**

14. Simplify

(a) $x + x + x + x$ _____

(b) $3x + 8y + 5x - 2y$ _____

(c) $4(x + 2) + 3(x - 8)$ _____

(d) $x^5 \times x^4$ _____

15. Factorise fully

(a) $6x + 14xy$ _____

(b) $x^2 + 7x + 12$ _____

(c) $a^2 - 9$ _____

16. Solve

(a) $x + 7 = 23$

_____

_____

Answer _____

(b) $4x - 19 = 13$

_____

_____

Answer _____

17. Given $v = u + at$ find v when:

(a) $u = 3$, $a = 10$, $t = 2$ $v =$ _____

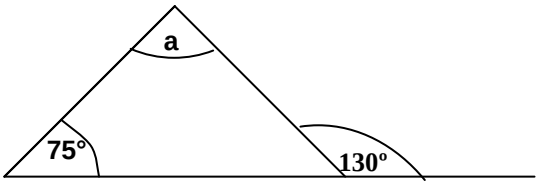
(b) $u = 5$, $a = -10$, $t = -3$ $v =$ _____

18. Convert:

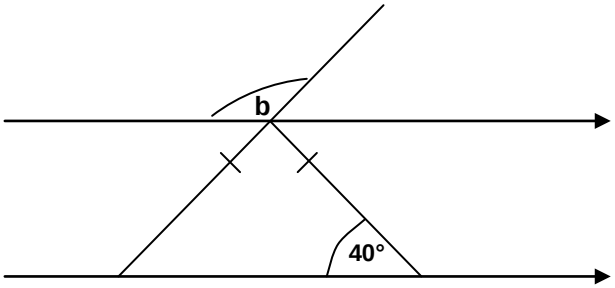
(a) **2.3 m** = _____ **mm**

(b) **45 g** = _____ **kg**

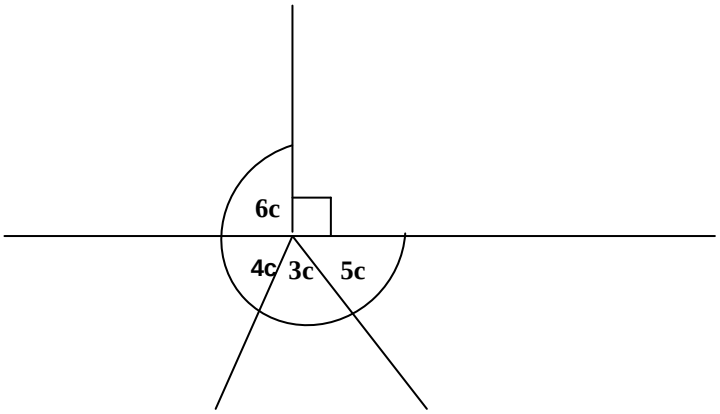
19. Calculate the lettered angles (diagrams **not** drawn accurately):



a = _____ °

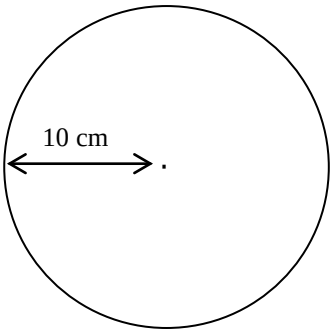


b = _____ °



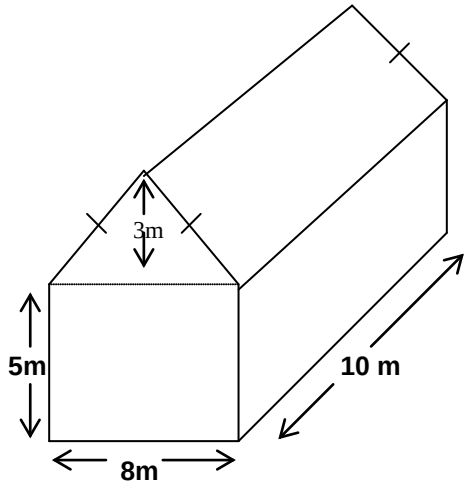
c = _____ °

20. Calculate the **area** and **circumference** of the circle.
Radius = **10 cm**.
Use π **= 3.14**



Answers: **Area** = _____ cm^2 **Circumference** = _____ cm

21. Calculate the **volume** and **total surface area** of the shape drawn below. Show all your working.



Answers: **Volume** = _____ m^3 **Total surface area** = _____ m^2

22. Solve

(a) $5x + 6y = 18$

$3x - 2y = 8$

_____

_____

_____

_____

_____ $x =$ ____

_____ $y =$ ____

(b) $x^2 + 3x - 10 = 0$

_____

_____

_____ $x =$ ____

(c) $2^x = 4^{x-1}$

_____

_____

_____ $x =$ ____

(d) $\frac{2}{x+2} + \frac{1}{x} = 1$

_____

_____

_____

_____

_____ $x =$ ____

GLOSSARY

Calculators NOT permitted

Show all your working

Answer

Write down the next two numbers

Simplify

Factorise fully

Solve

Find

Convert

Calculate

Angles

Area

Circumference

Circle

Total surface area

Shape