## SECTION A

For each question, write the letter A, B, C or D, which corresponds to the correct answer on the foolscap.

[1 mark for each question]

1. The prime factors of 18 are
   A. 2, 3
   B. 1, 2,3
   C. 2, 3, 6, 9
   D. 2, 3, 6, 9, 18

2. $-3 + 5 + (-7) =$
   A. $-15$
   B. $-5$
   C. $1$
   D. $15$

3. $89.6 \div 0.35 =$
   A. 0.25
   B. 2.56
   C. 25.6
   D. 256

4. The value of $m - 14$ when $m = -5$ is
   A. $-19$
   B. $-9$
   C. $9$
   D. $19$

5. 0.05078 correct to 3 significant figures is
   A. 0.05
   B. 0.0507
   C. 0.0508
   D. 0,051

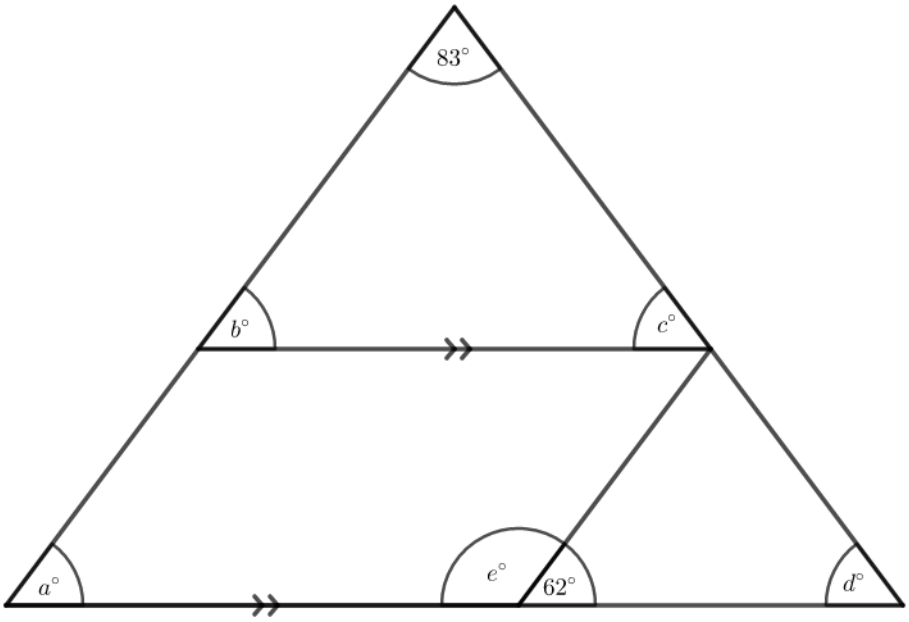
6. A triangle and a parallelogram have the same base and the same area. If the height of the triangle is 5 cm, the height of the parallelogram is
   A. 1.25 cm
   B. 2.5 cm
   C. 5 cm
   D. 10 cm

## SECTION B

Show ALL working.

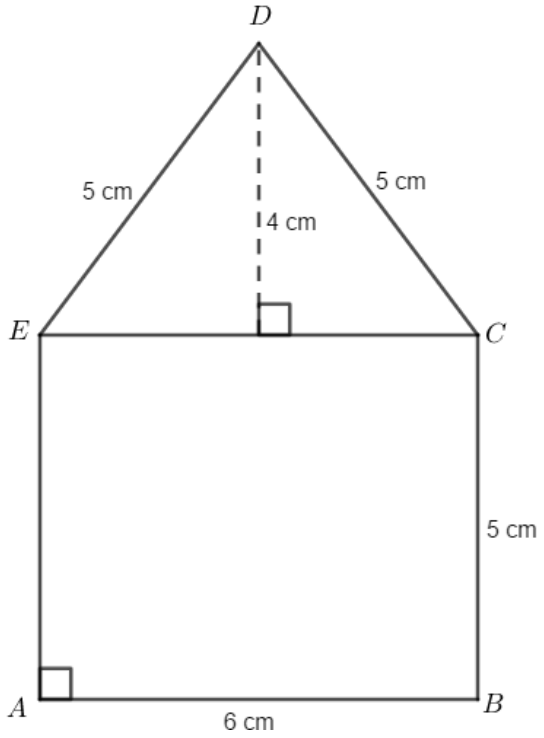
1. Simplify the following:
   (a) $-4 + (-7)$ [1]
   (b) $6 + (-9)$ [1]
   (c) $(-7) \times (-3)$ [1]
   (d) $29 \times (-2)$ [1]

2. In the figure below, not drawn to scale, determine the values of $a, b, c, d$ and $e$, stating the reasons for your answers. [10]




3. If $A = \{p, q, r, s\}, B = \{t, u, r, q\}, C = \{p, q, r, q, s, q\}$ and $D = \{t, r, q, u\}$, state whether each of the following is TRUE or FALSE. [10]
   (i) $A = B$
   (ii) $n(A) = n(B)$
   (iii) $A = D$
   (iv) $n(A) = n(D)$
   (v) $u \in C$
   (vi) $t \notin F$
   (vii) $B = D$
   (viii) $B \neq C$
   (ix) $n(C) = 6$
   (x) $A = C$

4. Calculate the area and the perimeter of the face $ABCDE$. [6]




5. (a) Convert $63_{10}$ to
   (i) base four [2]
   (ii) base eight [2]
   (b) Convert $11011_2$ to base 10, then convert the result to base eight. [4]

6. (a) Find the HCF of 63 and 90 using the prime factor method. [3]
   (b) Find the LCM of 12 and 15 using the prime factor method. [3]

7. (a) Simplify:
   (i) $7h - 4 - 3h + 11$ [2]
   (ii) $8x - 6y - 9y - 2x$ [2]
   (iii) $\frac{7x^3}{x}$ [2]
   (iv) $3a \times 8ab$ [2]

   (b) Find the value of
   (i) $4x$ [1]
   (ii) $5y - xy$ [3]

   when $x = 2$ and $y = -3$.

(c) Simplify:

(i) $5a + 21a \div 7$ [2]

(ii) $1 - x \times 0$ [1]

(iii) $7x \div x + 5$ [2]

(d) Solve the following equations.

(i) $5 - x = -20$ [2]

(ii) $3y + 8 = 41$ [2]

(iii) $9 = 3h + 7$ [3]

(iv) $3a - 15 = 6a - 12$ [4]

8. (a) Simplify:

(i) $\left(2\frac{1}{2}\right)^2$ [2]

(ii) $4\frac{3}{8} \times \frac{4}{15} \div 11\frac{2}{3}$ [4]

(b) \$300 was shared between Dan and Ken so that Ken's share to Dan's share was 2: 3. What was Ken's share? [3]

(c) 12.5 kg of flour costs \$5.25. What is the cost of 1 kg of flour? [3]

(d) A man bought a car for \$70, 000. He sold it a year later for \$56, 000. What percentage of his money did he lose? [3]

(e) A shopkeeper bought a radio for \$412.50. The price was increased by 42%, what was the new price? [3]

(f) The price of a chain is \$53.10 when sales tax of 18% is included. What is the actual sales tax? [4]

**END OF EXAMINATION**