

TEACHERS WITHOUT BORDERS PROGRAMME

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

With grateful thanks to our associate partners, The [National Department of Basic Education](#), The [Independent Examinations Board](#), [Siyavula Education](#), [Smarticks](#), [Noteshare](#), [Lemonlicious](#), [datacentrix](#), and most of all, to the schools and teachers from both the public and private education sectors who as founder contributors, have lent content to the [Teachers without Borders programme](#), for the benefit of all South Africa's learners.

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Contributing schools to date:

Clifton School	Milnerton High	Rustenburg Girls' High	St Peter's
Durban Girls'	Northwood High	St Anne's DC	St Stithians
Fairmont High	Roedean	St John's DSG	Wynberg Boys' High
Herzlia High	Rondebosch Boys'	St Mary's DSG Kloof	Wynberg Secondary

Section A [80 Marks]

Question 1

- a) 19 ✓
 b) 25 ✓
 c) $\sqrt[3]{-27}$ ✓
 d) $\frac{3}{8}$ ✓

[4]

Question 2.

a)

5	275	2	350
5	55	5	175
11	11	5	35
		7	7
			1

b) HCF = $5^2 = 25$

(4)
(2)
[6]

Question 3

- a) $-9 + 5 = -4$
 b) $\frac{-4 - 8}{-6} = \frac{-12}{-6} = 2$
 c) $5 - (-2) + 4 = 5 + 2 + 4 = 11$

(2)
(3)
(4)
[9]

Question 4

- a) $3c^2$
 b) $-4a$
 c) $3p^2$
 d) 2

(1)
(1)
(1)
(1)

e) $3a + 4ab - 2a$
 = $a + 4ab$

(3)

f) $3(x-y) - 2(2x-y) - 3xc$

= $3x - 3y - 4x + 2y - 3xc$
 = $-4x - y - 3xc$

(4)

g) $\frac{14d^2}{7d} - \frac{7d}{7d}$
 = $2d - 1$

(3)

h) $10x^9$

(2)

i) $6a^4b^2 \times 9a^4b^2$
 = $54a^8b^4$

(4)

j) $\frac{5p^3 \times p^8q^6}{10p^9q^3}$
 = $\frac{5p^{11}q^6}{10p^9q^3}$
 = $\frac{p^{10}q^3}{2}$

(4)

[24]

Question 5

a) $-4x^3 + 3x^2 - 4x + 9$ ✓
(1)

b) 4 ✓
(1)

c) 3 ✓
(1)

d) $9 + 3(-1)^2 - 4(-1)^3 - 4(-1)$ ✓
correct signs
 $= 9 + 3 + 4 + 4$ ✓
 $= 20$ ✓
(3)

[6]

Question 6

a) $a + b$ ✓
(1)

b) $axb = ab$ ✓
(1)

c) $3x(p-q)$ or $3(p-q)x$ ✓
(2)

d) $x + 2x = 3x$ ✓
(3)

[7]

Question 7

a) $((3)(-2))^2$ ✓
m subst
 $= (-6)^2$ ✓
 $= 36$ ✓
(2)

[2]

b) $\frac{ab}{c}$ ✓
m sub
 $= \frac{(3)(-2)}{0}$ ✓
 $= \frac{-6}{0}$ ✓
 $= \frac{-6}{0}$ ✓
NO SOLUTION?
(2)

[2]

e) $a - 2b$ ✓
 $= 3 - 2(-2)$ ✓
 $= 3 + 4$ ✓
 $= 7$ ✓
(2)

[6]

Question 8

a) $x = 6$ ✓
(1)

b) $x = -5 \times 2$ ✓
 $x = -10$ ✓
(2)

c) $4x + 9x = 5 + 21$ ✓
m rearrange
 $13x = 26$ ✓
 $x = \frac{26}{13}$ ✓
m ?
 $x = 2$ ✓
(3)

[3]

d) $4(x+3) = 5(6x-2) + 3$ ✓
m distribution

$4x + 12 = 30x - 10 + 3$ ✓
m rearrange
 $4x - 30x = -10 - 12 + 3$ ✓

$-26x = -19$ ✓

$x = \frac{-19}{-26}$ ✓

$x = \frac{19}{26}$ ✓
(4)

[4]

e) $2x^2 = 32$ ✓
m ?
 $x^2 = \frac{32}{2}$ ✓

$x^2 = 16$ ✓

$x = \sqrt{16}$ ✓

$x = \pm 4$ ✓
(3)

[3]

Question 9

$$\begin{aligned} & \checkmark m(+)
 & 3x + 20 + 10 - 2x + 4x + 18 + 5(7 - x) \checkmark A \text{ signs} \\ & = \underline{3x} + 20 + 10 - \underline{2x} + \underline{4x} + 18 + 35 - \underline{5x} \\ & = \underline{83} \checkmark A \end{aligned}$$

[3]

Question 10

$$\checkmark A \quad x - 2 \quad \text{and} \quad x - 1 \quad \checkmark A$$

[2]

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SECTION B – 45 Marks

NAME _____ **GRADE 8** _____ **GEBBERS** **RUGBAR** **SCHWEGMANN**

Instructions

1. Write your **Name** and **Grade** at the top of the page in the space provided.
2. **Circle** your teacher's name.
3. Answer all the questions on this question paper.
5. Show **all your working** out in the spaces provided.

QUESTION 1

Fill in the missing word in each of following:

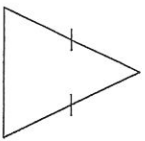
- a. 250° is called a(n) reflex angle. ✓
- b. The complement of 40° is 50° . ✓
- c. The supplement of 80° is 100° . ✓
- d. The size of an angle of an equilateral triangle is 60° degrees. ✓
- e. A triangle with three sides of equal lengths is called a(n) equilateral triangle. ✓
- f. If an obtuse angle is halved, what type of angle is formed? acute. ✓
- g. The angle between the two hands of a clock at 12h 20 is 120° degrees. ✓
- h. 90° is also known as a right angle. ✓

[8]

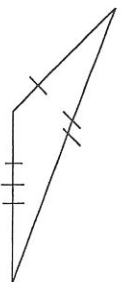
QUESTION 2

2.1 Classify each triangle according to their sides.

(a)



(b)



Isosceles Δ ✓

Scalene Δ ✓

(2)

2.1 Use a ruler and pencil to draw an example of:

(a) an acute angle

(b) a reflex angle.

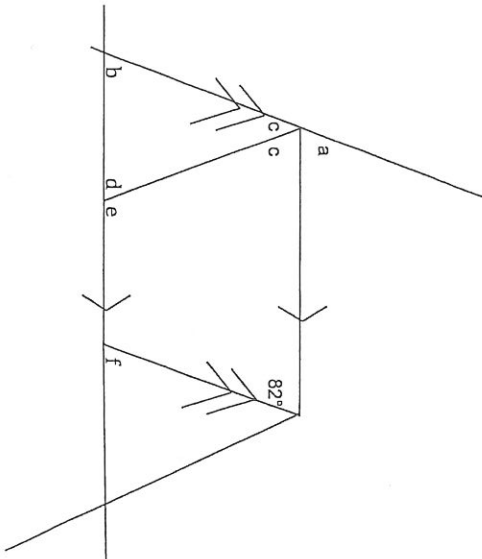
A protractor does not have to be used.

<p>(a) An acute angle</p> <p style="text-align: right;">(1)</p>	<p>(b) A reflex angle</p> <p style="text-align: right;">(1)</p>
[4]	[4]

QUESTION 3

- 3.1 Give the value of each of the letters in the angles of this diagram. No reasons need be given.

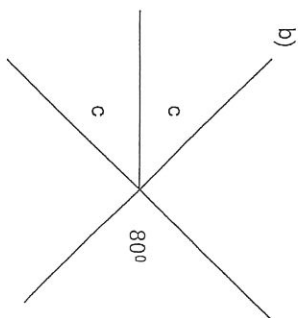
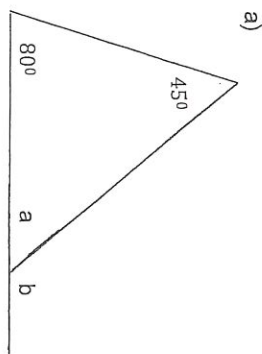
Write your answers in the box below the diagram.



a.	82°	✓
b.	82°	✓
c.	49°	✓
d.	49°	✓
e.	131°	✓
f.	82°	✓

(6)

- 3.2 Calculate the value of the letter in each of the following. Show all your working and give reasons for your answers.

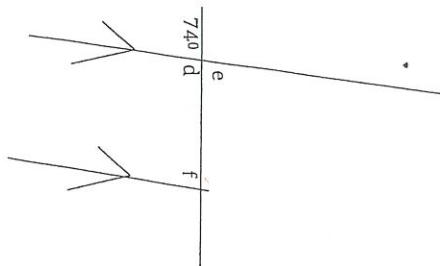


a) $a + 80^\circ + 45^\circ = 180^\circ$ (Sum of Δ)
 $a + 125^\circ = 180^\circ$
 $a = 180^\circ - 125^\circ$
 $a = 55^\circ$ ✓
Reason: $b + 55^\circ = 180^\circ$ (Δ 's on st line)
 $b = 180^\circ - 55^\circ$
 $b = 125^\circ$ ✓
OR
 $b = 80^\circ + 45^\circ$ (ext \angle of Δ)
 $b = 125^\circ$ ✓

b) $c + c = 80^\circ$ (Vert opp \angle s)
 $2c = 80^\circ$
 $c = \frac{80^\circ}{2}$
 $c = 40^\circ$ ✓
Reason: Statement

(4)

c)

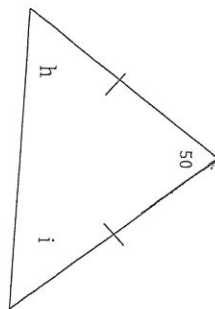


$d = 180^\circ - 74^\circ$ (L's on st line) reason
 $d = 106^\circ$ n

$e = 74^\circ$ (vert opp L's) reason
 OR (L's on st line)

$F = 74^\circ$ (convexp L's || lines) full reason
 OR (Co-int L's || lines) -1/2 no || lines

d)



$h = i$ (L's opp sides) reason
 (Isos Δ)

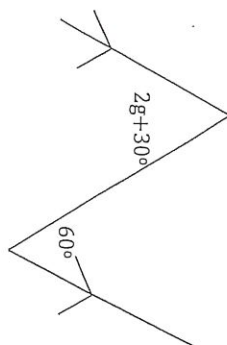
$h = i = (180^\circ - 50^\circ) \div 2$ m
 (L sum Δ) reason

$h = i = 65^\circ$ n

(7)

(5)

e.



$2g + 30^\circ = 60^\circ$ (alt L's = || lines) reason
 $2g = 60^\circ - 30^\circ$ reason

$2g = 30^\circ$

$g = \frac{30^\circ}{2}$ m ÷ 2

$g = 15^\circ$ n

(5)

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