2.5 Geometry and Measures: 1-hour Pack

ISEB CE.M5 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Alloy C has a density of 2.7 g/cm^3. What volume of alloy C has a mass of 540 g?

- [ ] A) 20 cm³
- [ ] B) 200 cm³
- [ ] C) 537.3 cm³
- [ ] D) 1458 cm³
- [ ] E) 2000 cm³

---

2 An isosceles triangle has an angle of 110 degrees between its two equal sides. What is the size of each of the other two angles?

- [ ] A) 35 degrees
- [ ] B) 110 degrees
- [ ] C) 45 degrees
- [ ] D) 70 degrees
- [ ] E) 55 degrees

---

3 The bearing of X from V is 215 degrees. What is the bearing of V from X?

- [ ] A) 145
- [ ] B) 125
- [ ] C) 035
- [ ] D) 305
- [ ] E) 325

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4 A block of alloy B has mass 225 g and volume 25 cm³. Find its density.

- [ ] A) 9 g/cm^3
- [ ] B) 90 g/cm^3
- [ ] C) 200 g/cm^3
- [ ] D) 0.11 g/cm^3
- [ ] E) 0.90 g/cm^3

---

5 An isosceles triangle has two equal angles of 36 degrees. What is the size of the third angle?

- [ ] A) 118 degrees
- [ ] B) 108 degrees
- [ ] C) 144 degrees
- [ ] D) 54 degrees
- [ ] E) 288 degrees

---

6 Convert 0.31 m to cm.

- [ ] A) 310 cm
- [ ] B) 3.1 cm
- [ ] C) 3100 cm
- [ ] D) 0.31 cm
- [ ] E) 31 cm

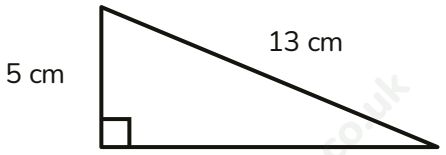
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7 From a lighthouse, the bearing of a buoy is 070 degrees and the bearing of a rock is 115 degrees. What is the angle between the two directions, as seen from the lighthouse?

- [ ] A) 135 degrees
- [ ] B) 35 degrees
- [ ] C) 45 degrees
- [ ] D) 5 degrees
- [ ] E) 315 degrees

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8 A right-angled triangle has hypotenuse 13 cm and one leg of 5 cm.



(a) Calculate the length of the other leg. **(4)**

.....

9 A block of plastic has mass 100 g and volume 20 cm³. Find its density.

- ☐ A) 0.50 g/cm^3
- ☐ B) 50 g/cm^3
- ☐ C) 0.20 g/cm^3
- ☐ D) 5 g/cm^3
- ☐ E) 2000 g/cm^3

10 Convert 21 kg to g.

- ☐ A) 2100 g
- ☐ B) 2100000 g
- ☐ C) 210000 g
- ☐ D) 21000 g
- ☐ E) 210 g

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11 From a lighthouse, the bearing of a buoy is 320 degrees and the bearing of a rock is 070 degrees. What is the angle between the two directions, as seen from the lighthouse?

- ☐ A) 120 degrees
- ☐ B) 250 degrees
- ☐ C) 110 degrees
- ☐ D) 30 degrees
- ☐ E) 70 degrees

---

12 Plastic has a density of 9.5 g/cm^3. Find the mass of 20 cm^3 of plastic.

- ☐ A) 2.11 g
- ☐ B) 190 g
- ☐ C) 19 g
- ☐ D) 29.5 g
- ☐ E) 1900 g

---

13 The three angles of a triangle are (x) degrees, (2x + 11) degrees, (3x + 13) degrees. Find the value of x.

- ☐ A) 30
- ☐ B) 56
- ☐ C) 25
- ☐ D) 27
- ☐ E) 26

---

14 Convert 43 m to cm.

- ☐ A) 0.43 cm
- ☐ B) 43000 cm
- ☐ C) 43 cm
- ☐ D) 430 cm
- ☐ E) 4300 cm

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15 A walker faces on a bearing of 075 degrees, then turns 130 degrees anticlockwise. What is the new bearing?

- [ ] A) 305
- [ ] B) 295
- [ ] C) 035
- [ ] D) 025
- [ ] E) 205

---

16 Resin has a density of 8 g/cm^3. What volume of resin has a mass of 320 g?

- [ ] A) 4 cm³
- [ ] B) 40 cm³
- [ ] C) 400 cm³
- [ ] D) 2560 cm³
- [ ] E) 312 cm³

---

17 Convert 7.7 m to cm.

- [ ] A) 77000 cm
- [ ] B) 7700 cm
- [ ] C) 7.7 cm
- [ ] D) 770 cm
- [ ] E) 77 cm

---

18 A walker faces on a bearing of 280 degrees, then turns 130 degrees clockwise. What is the new bearing?

- [ ] A) 140
- [ ] B) 230
- [ ] C) 050
- [ ] D) 330
- [ ] E) 180

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19 Alloy B has a density of 9 g/cm^3. What volume of alloy B has a mass of 900 g?

- [ ] A) 100 cm³
- [ ] B) 909 cm³
- [ ] C) 8100 cm³
- [ ] D) 10 cm³
- [ ] E) 1000 cm³

---

20 In a triangle, two of the interior angles are 68 degrees and 28 degrees. One side is extended to make an exterior angle at the third corner. What is the size of this exterior angle?

- [ ] A) 86 degrees
- [ ] B) 264 degrees
- [ ] C) 84 degrees
- [ ] D) 106 degrees
- [ ] E) 96 degrees

---

21 Convert 0.09 m to cm.

- [ ] A) 90 cm
- [ ] B) 9 cm
- [ ] C) 0.09 cm
- [ ] D) 0.9 cm
- [ ] E) 900 cm

---

22 From a lighthouse, the bearing of a buoy is 020 degrees and the bearing of a rock is 185 degrees. What is the angle between the two directions, as seen from the lighthouse?

- [ ] A) 25 degrees
- [ ] B) 175 degrees
- [ ] C) 15 degrees
- [ ] D) 165 degrees
- [ ] E) 155 degrees

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23 A block of alloy B has mass 125 g and volume 50 cm^3. Find its density.

- [ ] A) 0.25 g/cm^3
- [ ] B) 2.5 g/cm^3
- [ ] C) 75 g/cm^3
- [ ] D) 6250 g/cm^3
- [ ] E) 25 g/cm^3

---

24 An isosceles triangle has an angle of 112 degrees between its two equal sides. What is the size of each of the other two angles?

- [ ] A) 44 degrees
- [ ] B) 56 degrees
- [ ] C) 68 degrees
- [ ] D) 112 degrees
- [ ] E) 34 degrees

---

25 Convert 1.8 cm^2 to mm^2.

- [ ] A) 180 mm^2
- [ ] B) 1.8 mm^2
- [ ] C) 1800 mm^2
- [ ] D) 18 mm^2
- [ ] E) 18000 mm^2

---

26 A walker faces on a bearing of 225 degrees, then turns 60 degrees clockwise. What is the new bearing?

- [ ] A) 015
- [ ] B) 345
- [ ] C) 165
- [ ] D) 285
- [ ] E) 275

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27 A block of resin has mass 100 g and volume 40 cm³. Find its density.

- [ ] A) 0.25 g/cm^3
- [ ] B) 25 g/cm^3
- [ ] C) 2.5 g/cm^3
- [ ] D) 4000 g/cm^3
- [ ] E) 0.40 g/cm^3

---

28 An isosceles triangle has an angle of 126 degrees between its two equal sides. What is the size of each of the other two angles?

- [ ] A) 63 degrees
- [ ] B) 54 degrees
- [ ] C) 37 degrees
- [ ] D) 126 degrees
- [ ] E) 27 degrees

---

29 Convert 7.8 kg to g.

- [ ] A) 780000 g
- [ ] B) 7800 g
- [ ] C) 78000 g
- [ ] D) 780 g
- [ ] E) 78 g

---

30 A block of resin has mass 156 g and volume 20 cm³. Find its density.

- [ ] A) 0.13 g/cm^3
- [ ] B) 0.78 g/cm^3
- [ ] C) 136 g/cm^3
- [ ] D) 7.8 g/cm^3
- [ ] E) 78 g/cm^3

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31 In a triangle, two of the interior angles are 26 degrees and 74 degrees. One side is extended to make an exterior angle at the third corner. What is the size of this exterior angle?

- ☐ A) 100 degrees
- ☐ B) 110 degrees
- ☐ C) 260 degrees
- ☐ D) 80 degrees
- ☐ E) 90 degrees

---

32 Convert 73 kg to g.

- ☐ A) 7300000 g
- ☐ B) 73000 g
- ☐ C) 730 g
- ☐ D) 7300 g
- ☐ E) 730000 g

---

33 The bearing of M from P is 125 degrees. What is the bearing of P from M?

- ☐ A) 055
- ☐ B) 215
- ☐ C) 305
- ☐ D) 035
- ☐ E) 125

---

34 A block of resin has mass 200 g and volume 40 cm^3. Find its density.

- ☐ A) 50 g/cm^3
- ☐ B) 0.20 g/cm^3
- ☐ C) 8000 g/cm^3
- ☐ D) 160 g/cm^3
- ☐ E) 5 g/cm^3

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35 An isosceles triangle has two equal angles of 80 degrees. What is the size of the third angle?

- ☐ A) 200 degrees
- ☐ B) 80 degrees
- ☐ C) 30 degrees
- ☐ D) 20 degrees
- ☐ E) 10 degrees

---

36 A walker faces on a bearing of 045 degrees, then turns 130 degrees clockwise. What is the new bearing?

- ☐ A) 275
- ☐ B) 165
- ☐ C) 265
- ☐ D) 175
- ☐ E) 305

---

37 A block of plastic has mass 750 g and volume 150 cm³. Find its density.

- ☐ A) 0.50 g/cm^3
- ☐ B) 0.20 g/cm^3
- ☐ C) 5 g/cm^3
- ☐ D) 50 g/cm^3
- ☐ E) 112500 g/cm^3

---

38 In a triangle, two of the interior angles are 79 degrees and 80 degrees. One side is extended to make an exterior angle at the third corner. What is the size of this exterior angle?

- ☐ A) 101 degrees
- ☐ B) 159 degrees
- ☐ C) 21 degrees
- ☐ D) 149 degrees
- ☐ E) 1 degrees

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39 Convert 3.5 m to mm.

- [ ] A) 3500 mm
- [ ] B) 35000 mm
- [ ] C) 35 mm
- [ ] D) 350000 mm
- [ ] E) 350 mm

---

40 A boat sails north-west. What is its bearing, as a three-figure bearing?

- [ ] A) 135
- [ ] B) 225
- [ ] C) 180
- [ ] D) 090
- [ ] E) 315

---

41 Alloy C has a density of 9 g/cm^3. Find the mass of 200 cm³ of alloy C.

- [ ] A) 191 g
- [ ] B) 22.22 g
- [ ] C) 18000 g
- [ ] D) 209 g
- [ ] E) 1800 g

---

42 In a triangle, two of the interior angles are 58 degrees and 31 degrees. One side is extended to make an exterior angle at the third corner. What is the size of this exterior angle?

- [ ] A) 79 degrees
- [ ] B) 122 degrees
- [ ] C) 89 degrees
- [ ] D) 99 degrees
- [ ] E) 91 degrees

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43 The bearing of M from T is 280 degrees. What is the bearing of T from M?

- [ ] A) 100
- [ ] B) 260
- [ ] C) 010
- [ ] D) 080
- [ ] E) 190

---

44 Alloy A has a density of 9 g/cm^3. What volume of alloy A has a mass of 1080 g?

- [ ] A) 12 cm³
- [ ] B) 1071 cm³
- [ ] C) 1200 cm³
- [ ] D) 120 cm³
- [ ] E) 1089 cm³

---

45 An isosceles triangle has two equal angles of 23 degrees. What is the size of the third angle?

- [ ] A) 157 degrees
- [ ] B) 23 degrees
- [ ] C) 124 degrees
- [ ] D) 314 degrees
- [ ] E) 134 degrees

---

46 Convert 9000000 m² to km^2.

- [ ] A) 0.09 km²
- [ ] B) 0.9 km²
- [ ] C) 900 km²
- [ ] D) 9 km²
- [ ] E) 90 km²

---

47 The bearing of M from P is 145 degrees. What is the bearing of P from M?

- [ ] A) 215
- [ ] B) 325
- [ ] C) 055
- [ ] D) 235
- [ ] E) 035

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48 A block of alloy B has mass 800 g and volume 100 cm³. Find its density.

- [ ] A) 8 g/cm^3
- [ ] B) 0.80 g/cm^3
- [ ] C) 0.13 g/cm^3
- [ ] D) 80000 g/cm^3
- [ ] E) 700 g/cm^3

---

49 The three angles of a triangle are (x + 9) degrees, (3x + 9) degrees, (x - 8) degrees. Find the value of x.

- [ ] A) 70
- [ ] B) 33
- [ ] C) 34
- [ ] D) 36
- [ ] E) 35

---

50 Convert 0.84 m to cm.

- [ ] A) 840 cm
- [ ] B) 0.84 cm
- [ ] C) 84 cm
- [ ] D) 8400 cm
- [ ] E) 8.4 cm

---

51 The bearing of N from V is 025 degrees. What is the bearing of V from N?

- [ ] A) 155
- [ ] B) 115
- [ ] C) 295
- [ ] D) 205
- [ ] E) 025

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52 A block of alloy A has mass 480 g and volume 60 cm³. Find its density.

- ☐ A) 8 g/cm^3
- ☐ B) 80 g/cm^3
- ☐ C) 0.80 g/cm^3
- ☐ D) 0.13 g/cm^3
- ☐ E) 420 g/cm^3

---

53 In a triangle, two of the interior angles are 35 degrees and 70 degrees. One side is extended to make an exterior angle at the third corner. What is the size of this exterior angle?

- ☐ A) 255 degrees
- ☐ B) 75 degrees
- ☐ C) 145 degrees
- ☐ D) 115 degrees
- ☐ E) 105 degrees

---

54 A metal block has mass 540 g and volume 60 cm³.

(a) Calculate the density of the metal in g/cm^3. **(2)**

.....

(b) A second block of the same metal has volume 25 cm³. Calculate the mass of this block. **(2)**

.....

---

55 Convert 28 cm to mm.

- ☐ A) 28 mm
- ☐ B) 280 mm
- ☐ C) 28000 mm
- ☐ D) 2.8 mm
- ☐ E) 2800 mm

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56 The bearing of Y from V is 220 degrees. What is the bearing of V from Y?

- [ ] A) 320
- [ ] B) 310
- [ ] C) 040
- [ ] D) 140
- [ ] E) 130

---

57 An isosceles triangle has an angle of 36 degrees between its two equal sides. What is the size of each of the other two angles?

- [ ] A) 72 degrees
- [ ] B) 36 degrees
- [ ] C) 82 degrees
- [ ] D) 18 degrees
- [ ] E) 54 degrees

---

58 Convert 5.9 hours to minutes.

- [ ] A) 35.4 minutes
- [ ] B) 3540 minutes
- [ ] C) 444 minutes
- [ ] D) 590 minutes
- [ ] E) 354 minutes

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Mark scheme · 2.5 Geometry and Measures: 1-hour Pack

Question 1

B cao (200 cm^3); density = mass / volume **B1**

Answer: B) 200 cm^3

Question 2

A cao (35 degrees); angles in a triangle add to 180 degrees; the two base angles are equal **B1**

Answer: A) 35 degrees

Question 3

C cao (035); bearings are measured clockwise from north **B1**

Answer: C) 035

Question 4

A cao (9 g/cm^3); density = mass / volume **B1**

Answer: A) 9 g/cm^3

Question 5

B cao (108 degrees); angles in a triangle add to 180 degrees **B1**

Answer: B) 108 degrees

Question 6

E cao (31 cm); multiply or divide by the conversion factor **B1**

Answer: E) 31 cm

Question 7

C cao (45 degrees); bearings are measured clockwise from north **B1**

Answer: C) 45 degrees

Question 8

(a) $b^2 = c^2 - a^2$ oe seen **M1**

(a) 169 - 25 = 144 seen **A1**

(a) $\sqrt{144}$ taken **M1**

(a) 12 cm cao **A1**

(a) Answer: 12 cm

Question 9

D cao (5 g/cm^3); density = mass / volume **B1**

Answer: D) 5 g/cm^3

Question 10

D cao (21000 g); multiply or divide by the conversion factor **B1**

Answer: D) 21000 g

Question 11

C cao (110 degrees); bearings are measured clockwise from north **B1**

Answer: C) 110 degrees

Question 12

B cao (190 g); density = mass / volume **B1**

Answer: B) 190 g

Question 13

E cao (26); sum the angles, set equal to 180, solve **B1**

Answer: E) 26

Question 14

E cao (4300 cm); multiply or divide by the conversion factor **B1**

Answer: E) 4300 cm

Question 15

A cao (305); bearings are measured clockwise from north **B1**

Answer: A) 305

Question 16

B cao (40 cm^3); density = mass / volume **B1**

Answer: B) 40 cm^3

Question 17

D cao (770 cm); multiply or divide by the conversion factor **B1**

Answer: D) 770 cm

Question 18

C cao (050); bearings are measured clockwise from north **B1**

Answer: C) 050

Question 19

A cao (100 cm^3); density = mass / volume **B1**

Answer: A) 100 cm^3

Question 20

E cao (96 degrees); exterior angle = sum of the two opposite interior angles **B1**

Answer: E) 96 degrees

Question 21

B cao (9 cm); multiply or divide by the conversion factor **B1**

Answer: B) 9 cm

Question 22

D cao (165 degrees); bearings are measured clockwise from north **B1**

Answer: D) 165 degrees

Question 23

B cao (2.5 g/cm^3); density = mass / volume **B1**

Answer: B) 2.5 g/cm^3

Question 24

E cao (34 degrees); angles in a triangle add to 180 degrees; the two base angles are equal **B1**

Answer: E) 34 degrees

Question 25

A cao (180 mm^2); multiply or divide by the conversion factor **B1**

Answer: A) 180 mm^2

Question 26

D cao (285); bearings are measured clockwise from north **B1**

Answer: D) 285

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Question 27

C cao (2.5 g/cm^3); density = mass / volume **B1**

Answer: C) 2.5 g/cm^3

Question 28

E cao (27 degrees); angles in a triangle add to 180 degrees; the two base angles are equal **B1**

Answer: E) 27 degrees

Question 29

B cao (7800 g); multiply or divide by the conversion factor **B1**

Answer: B) 7800 g

Question 30

D cao (7.8 g/cm^3); density = mass / volume **B1**

Answer: D) 7.8 g/cm^3

Question 31

A cao (100 degrees); exterior angle = sum of the two opposite interior angles **B1**

Answer: A) 100 degrees

Question 32

B cao (73000 g); multiply or divide by the conversion factor **B1**

Answer: B) 73000 g

Question 33

C cao (305); bearings are measured clockwise from north **B1**

Answer: C) 305

Question 34

E cao (5 g/cm^3); density = mass / volume **B1**

Answer: E) 5 g/cm^3

Question 35

D cao (20 degrees); angles in a triangle add to 180 degrees **B1**

Answer: D) 20 degrees

Question 36

D cao (175); bearings are measured clockwise from north **B1**

Answer: D) 175

Question 37

C cao (5 g/cm^3); density = mass / volume **B1**

Answer: C) 5 g/cm^3

Question 38

B cao (159 degrees); exterior angle = sum of the two opposite interior angles **B1**

Answer: B) 159 degrees

Question 39

A cao (3500 mm); multiply or divide by the conversion factor **B1**

Answer: A) 3500 mm

Question 40

E cao (315); bearings are measured clockwise from north **B1**

Answer: E) 315

Question 41

E cao (1800 g); density = mass / volume **B1**

Answer: E) 1800 g

Question 42

C cao (89 degrees); exterior angle = sum of the two opposite interior angles **B1**

Answer: C) 89 degrees

Question 43

A cao (100); bearings are measured clockwise from north **B1**

Answer: A) 100

Question 44

D cao (120 cm^3); density = mass / volume **B1**

Answer: D) 120 cm^3

Question 45

E cao (134 degrees); angles in a triangle add to 180 degrees **B1**

Answer: E) 134 degrees

Question 46

D cao (9 km^2); multiply or divide by the conversion factor **B1**

Answer: D) 9 km^2

Question 47

B cao (325); bearings are measured clockwise from north **B1**

Answer: B) 325

Question 48

A cao (8 g/cm^3); density = mass / volume **B1**

Answer: A) 8 g/cm^3

Question 49

C cao (34); sum the angles, set equal to 180, solve **B1**

Answer: C) 34

Question 50

C cao (84 cm); multiply or divide by the conversion factor **B1**

Answer: C) 84 cm

Question 51

D cao (205); bearings are measured clockwise from north **B1**

Answer: D) 205

Question 52

A cao (8 g/cm^3); density = mass / volume **B1**

Answer: A) 8 g/cm^3

Question 53

E cao (105 degrees); exterior angle = sum of the two opposite interior angles **B1**

Answer: E) 105 degrees

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Question 54

(a) 540 / 60 oe seen **M1**

(a) 9 g/cm^3 cao **A1**

(a) Answer: 9 g/cm^3

(b) 9 x 25 oe (ft from part a) **M1**

(b) 225 g cao **A1**

(b) Answer: 225 g

Question 55

B cao (280 mm); multiply or divide by the conversion factor **B1**

Answer: B) 280 mm

Question 56

C cao (040); bearings are measured clockwise from north **B1**

Answer: C) 040

Question 57

A cao (72 degrees); angles in a triangle add to 180 degrees; the two base angles are equal **B1**

Answer: A) 72 degrees

Question 58

E cao (354 minutes); multiply or divide by the conversion factor **B1**

Answer: E) 354 minutes

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