# GEOMETRY

**1) Find the angles X, Y and Z:** (1 point)

a)

b)
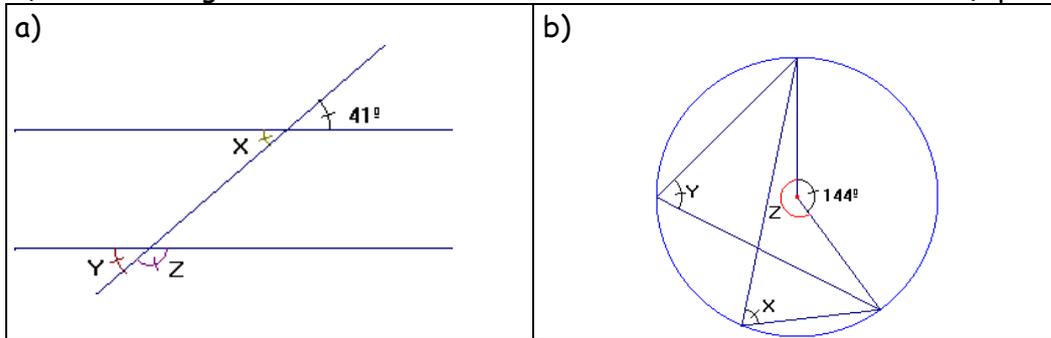
**2) Find the angle X:** (1.5 points)

a)

b)

c)
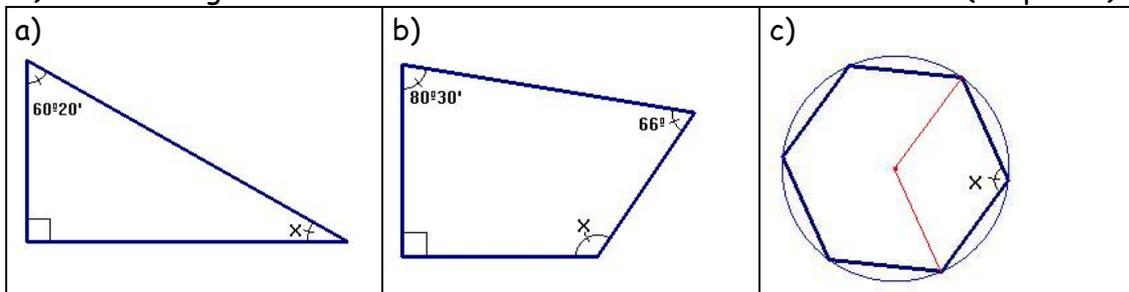
**3) Complete:** (1.5 points)

| a) 8.72 km = | m | b) 825 cm$^2$ = | m$^2$ |
|---|---|---|---|
| c) 1.85 dam = | km | d) 2087 km$^2$ = | hm$^2$ |
| e) 1372 mg = | g | f) 25 kg = | g |
| g) 0.321 kg = | mg | h) 16 dL = | L |

**4)** The legs of an isosceles right triangle are 7 cm long. Find the length of the hypotenuse (in millimetres). (1 point)

**5)** Calculate the perimeter of this trapezoid in decimetres (round to the nearest tenth). (1.25 points)
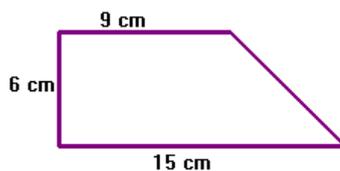
**6)** Find the missing diagonal of this rhombus in centimetres. (1.25 points)
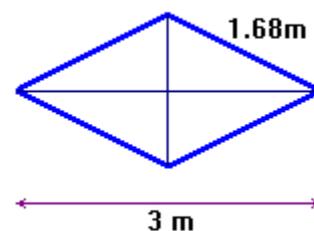
7) Complete: (1 point)
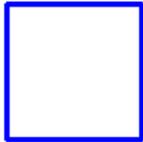
| Shape | Name | Shape | Name |
|-------|------|-------|------|
|  | Square |  |  |
|  |  |  |  |
|  |  |  |  |
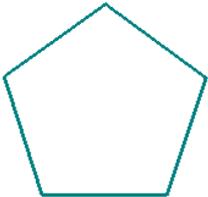
8) Draw the axes of reflection symmetry in each picture of exercise 7 (1.5 points)

**SOLUTION**

1) Find the angles X, Yand Z:

| a) | b) |
|---|---|
| | |
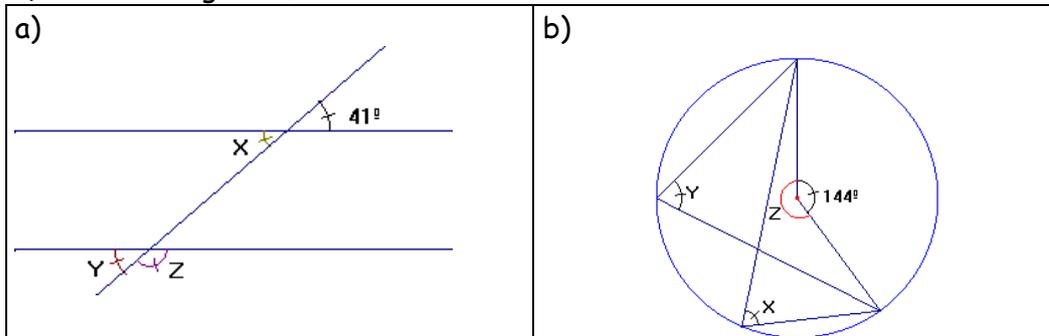
a)  X = 41°, Y = 41°, Z = 180 – 41 =139°

b)  X = Y = 144°:2 = 72° each;   Z = 360 – 144 = 216°

2) Find the angle X:

| a) | b) | c) |
|---|---|---|
| 60º20' | 80º30'    66º | |
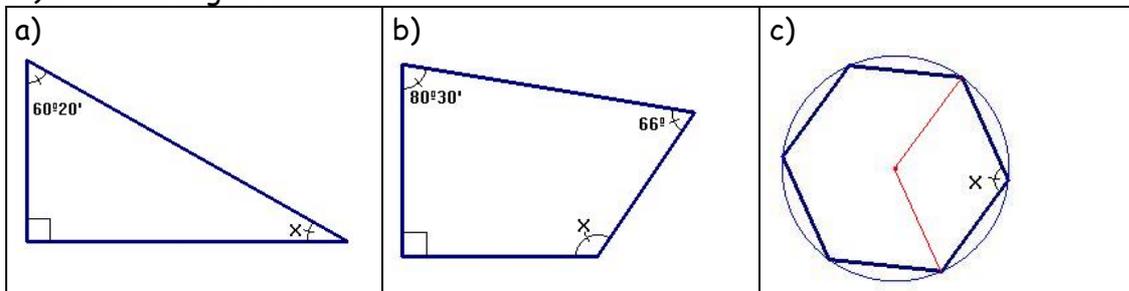
a)  X = 90°- 60°20' = 29° 40'

b)  X = 360° - 90° - 80°30' – 66° = 123°30'

c)  Regular Hexagon $\rightarrow (n-2)180 = 4\cdot180 = 720° \rightarrow X = 720:6 = 120°$

3) Complete:

| | |
|---|---|
| a) 8.72 km =          8720          m | b) 825 cm$^2$ =    0.0825     m$^2$ |
| c) 1.85 dam =          0.0185   km | d) 2087 km$^2$ =   208700  hm$^2$ |
| e) 1372 mg =      1.372  g | f) 25 kg =   25000  g |
| g) 0.321 kg =        321000 mg | h) 16 dL = 1.6     L |

4) The legs of an isosceles right triangle are 7 cm long. Find the length of the hypotenuse (in millimetres).

$$a^2 = 7^2 + 7^2 = 49 + 49 = 98$$

7cm        7cm

$$a = \sqrt{98} = 9.8994949 \text{ cm}$$

a
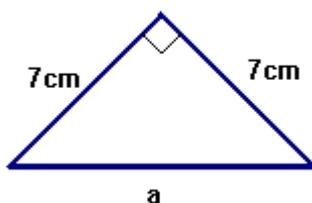
Solution: The hypotenuse is 98.99 mm long

5) Calculate the perimeter of this trapezoid in decimetres (round to the nearest tenth).
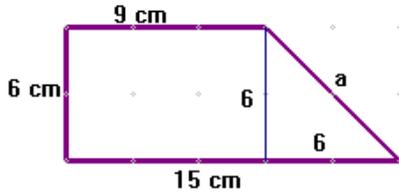
$$a^2 = 6^2 + 6^2 = 36 + 36 = 72$$

$$a = \sqrt{72} = 8.48528 \rightarrow a = 8.5 cm$$

$$P = 9 + 6 + 15 + 8.5 = 38.5 \text{ cm}$$

Solution: The perimeter is 3.85 dm

6) Find the missing diagonal of this rhombus in centimetres.
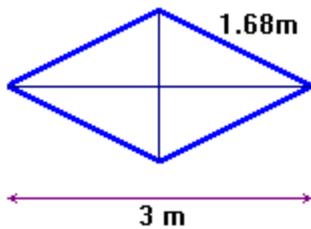
$$b^2 = 1.68^2 - 1.5^2 = 0.5724$$
$$b = \sqrt{0.5724} = 0.75657 \text{ m}$$
diagonal = $2 \cdot 0.75657 = 1.51314 m$
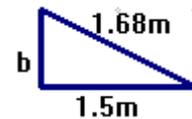
Solution: the diagonal is 151.314 cm long

7) Complete:

| Shape | Name | Shape | Name |
|-------|------|-------|------|
|       | Square |     | Isosceles triangle |
|       | Trapezoid |  | Rectangle |
|       | Pentagon |   | Rhombus |

8) Draw the axes of reflection symmetry in each picture of exercise 7 ↑