**S2 Revision worksheet (Level 3/4)**

1. **Do the following (no calculator): -**

   $(a)\ 12 - 2 \times 4$   $(b)\ 5 \times 7 - 1$   $(c)\ 10 + 4 \div 2$   $(d)\ 12 + 6 \div 2 \times 4$

2. **Find**

   $(a)\ 20\%\ of\ £45$       $(b)\ 40\%\ of\ £240$     $(c)\ 2\%\ of\ £350$

3. **Find the following without a calculator: -**

   $(a)\ \frac{2}{5}\ of\ £165$       $(b)\ \frac{7}{8}\ of\ 160$     $(c)\frac{3}{4}of\ 40$

4. **Simplify as far as (possible): -**

   $(a)4x + 4y + 4 - 3x - 3y + 3$     $(b)\ 8g + 2h - 7g - h + 3g + 4h$

5. **Multiply out the brackets and then simplify (Show all your working): -**

   $(a)\ 7(y - 1)$     $(b)\ 5(2a + 4)$     $(c)\ 6 + 2(x + 4)$

6. **Find the value of x by solving these equations:**

   $(a)\ 3x - 3 = 63$     $(b)\ 8x + 5 = 25$       $(c)\ 4x - 4 = 2x + 40$

7. **Find:**

   $(a) - 12 - (-2)$   $(b)\ (-11) + 6$     $(c) - 9 \times (-5)$     $(d) - 45 \div 5$

8. **Factorise the following:**

   $(a)\ 6x + 15$     $(b)\ 5x - 10$     $(c)\ 12 + 18x$

9. **Find:**

   $(a)\ 3^3$       $(b)\ 2^4$     $(c)\ \sqrt{49}$       $(d)\ \sqrt{64}$

10. Workout:

$(a)\ 23 - 13.15$  $(b)\ 21.6 - 8.39$  $(c)\ 213 \times 50$

11. If $a = 6,\ b = 5\ and\ c = -3.$

Find the value of: -

$(a)\ a - b$  $(b)\ a + b - c$  $(c)\ a + 2b - 3c$

12. Write down all the factors of each of the following: -
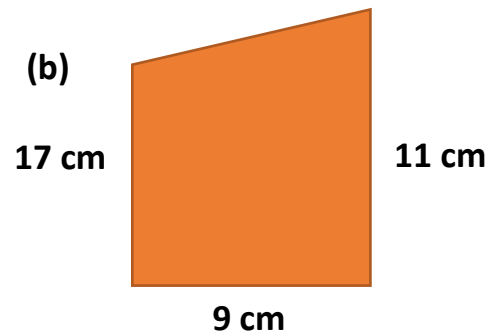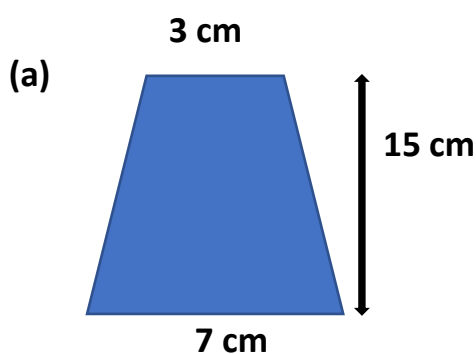
$(a)\ 8$  $(b)\ 14$  $(c)\ 30$  $(d)\ 45$

13. Find the HIGHEST COMMON FACTOR for each pair of numbers: –

$(a)\ 40\ and\ 25$  $(b)\ 18\ and\ 45$

14. Find the lowest common multiple of:

$(a)\ 3\ and\ 7$  $(b)\ 3,\ 5\ and\ 7$

15. Calculate the area of the following shapes: -



16. A bag contains 3 red sweets and 7 black sweets. A sweet is taken from the bag at random. What is the probability of taking:

(a) a red sweet  (b) a black sweet ?

17. Find:

(a) $\frac{5}{6} \div \frac{2}{3}$        (b) $2\frac{2}{3} + 3\frac{4}{5}$

18. This table shows the cost of hiring a cement mixer for several days: -

| No. of days hired (D) | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Cost in £'s (C) | 8 | 13 | 18 | | | |

(a) Copy and complete the table above
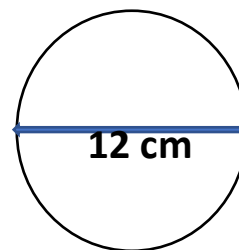(b) Write down the formula for determining the cost of hiring the mixer
(c) How much will it cost to hire the mixer for 10 days?

19. The diameter of this circle is 12 cm.

(a) Write down the length of its radius



**12 cm**

(b) Find its circumference

(c) Calculate its area.

20. A small boat, sailing at a steady rate of 18 km/hr, takes $3\frac{1}{2}$ hours to travel from Portree to the mainland. What is the length of its journey?

21. Company A and B offer different rates of payments for a £3000 conservatory

**Company A**
£400 deposit and makes 17 equal payments of £265.

**Company B**
£300 deposit and makes 18 equal payments of £185.

Calculate the total price for each company, and state which is the dearest.
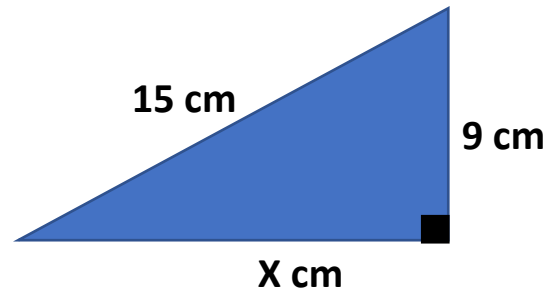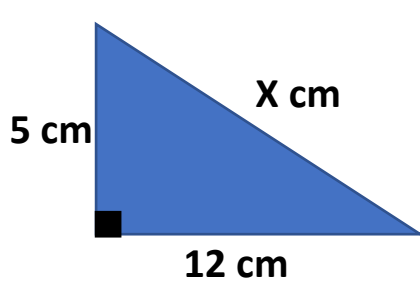
22. The exchange rate is $£1 = 1.2\ euros$.

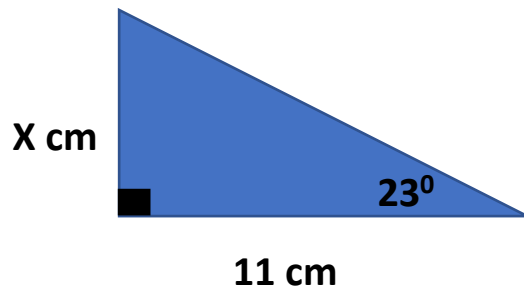Stef went to San Antonio in Ibiza. He changed £400 to euros before leaving.

(a) How many euros did he receive?
(b) How many pounds can he receive for 1300 euro?

**23. Calculate the length of the sides marked x cm (to 2 decimal places).**



X cm

5 cm

12 cm

15 cm

9 cm

X cm

**24. Calculate the side marked x cm.**



X cm

$23^0$

11 cm

**25. At the beginning of an orienteering competition two runners set off in different directions. Runner 1 runs NE for 350m. Runner 2 runs on a bearing of 150° for 200m.**
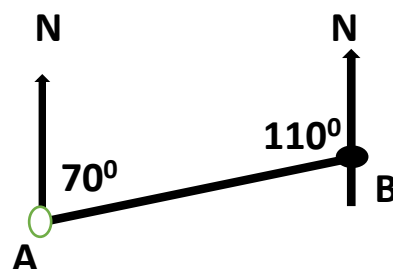
(a) Making an accurate scale drawing of the two runners.
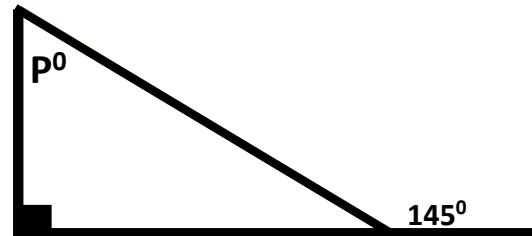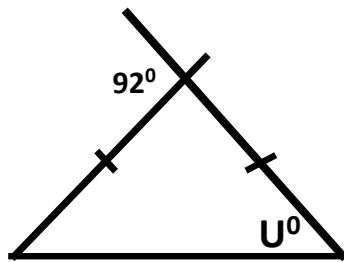   Scale: -  1 cm = 50 m
(b) Use your scale drawing, calculate how far apart are the two runners.
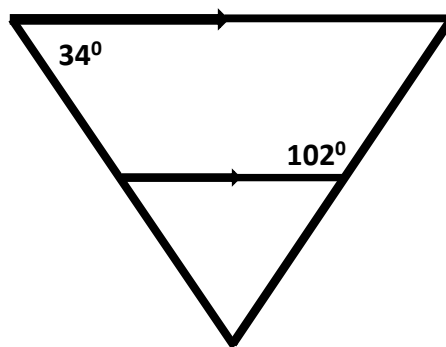
**26.  Find (do not measure): -**
   (a) the bearing from A to B       (b) the bearing from B to A.



N

N

$110^0$

$70^0$

B

A

**27. Calculate the sizes of the angles marked p and u from each diagram.**



**28. Copy the diagram and fill in the sizes of all the missing angles**



**29. A garden water trough is in the shape of a cuboid which measures 90cm by 30cm by 20cm. Calculate the number of litres that the trough holds when it is completely full. (1000cm³ = 1 litre)**

**30. Make a copy of each this shape neatly and carefully. Create a shape which has got half turn symmetry by rotating the shape by 180° around the given dot: –**