есть в электр. виде

13+
2004

Charterhouse Entrance Mathematics

Time allowed 45 minutes

Attempt as many questions as you can. Do not worry if you do not have enough time to finish..

It is very important that you show your method.

A calculator should be used for this paper.

1. Calculate the following giving your answer to 2 decimal places:

   a) $12.54 \div 2.38$ b) $4.58^2 + 8.34^2$

2. The area of a rectangle is $40cm^2$ and the length of one of its sides is 5cm. What is its perimeter?

3. Find two numbers that add together to give 20 and multiply together to give 64.

4. Solve the following equations:

   a) $5x + 18 = 59$ b) $7 - 2x = 13$ c) $4(x - 2) - 2(x + 1) = 46$

5. a) How many minutes are there in 3 hours 47 minutes?

   b) How many seconds are there in one week?

6. Write down the next two numbers in the following patterns

   a) 25, 23, 21, 19, 17, ...
   b) 2, 5, 9, 14, 20, ...
   c) 1, 4, 9, 16, 25, ...
   d) 0.5, 0.333, 0.25, 0.2, 0.167, ...

7. Which of the following fractions is the largest? Explain your method.

$$\frac{13}{15}, \quad \frac{14}{17}, \quad \frac{15}{18}, \quad \frac{28}{35}$$

8. Find the value of the following if $x = -4$

a) $x + 7$ b) $2x$ c) $3 - x$ d) x^2 e) $3x + 2$

9. What is the angle between the hour hand and minute hand of a clock at the following times:

a) Two o'clock b) Half past three

10. I have one hundred coins some of which are 2 pences and some of which are 5 pences. If they are worth £3.89 how many 2 pences are there? (Hint: let x be the number of two pences and write down an equation to solve.)

11. In the diagram below triangle ABC and triangle BDC are isosceles. Angle ACD is a right-angle. Find the angles marked x and y.

Note that the diagram is not drawn to scale.