

YOUR NAME : _____

Summer Examinations Revision Homework 2024

Exams start Monday 10th June 2024

Lesson 3

3.1 Exercise

Question 1

Tarquin says “Simplify using the fact that when you multiply same base indices add”.

Like this; $7^5 \times 7^3 = 7^8$

In a similar style, simplify;

(i) $5^3 \times 5^4$

(ii) $11^5 \times 11^7 \times 11^4$

(iii) $5 \times 5 \times 5 \times 5$

(iv) $13^4 \times 13 \times 13^3$

(v) $7^3 \times 7 \times 7^3$

(vi) $13^5 \times 13^0$

(vii) $5^7 \times 5^{-3}$

(viii) $11^{-7} \times 11^{-4}$

(ix) $7^5 \times 7^{-5}$

(x) $(7^4)^3$

[15 marks]

Question 2

The number 90 can be written as a *product of primes*.

That is, $90 = 2 \times 3^2 \times 5$

Write each of the following numbers as a *product of primes*.

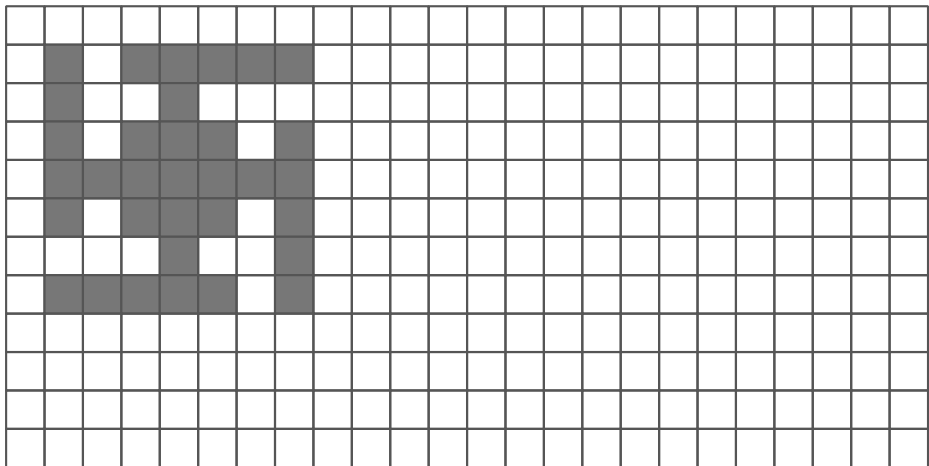
(i) 68

(ii) 225

(iii) 1008

[15 marks]

Question 3



On the grid draw a rectangle that has the same area as the shape.

[5 marks]

Question 4

Arrange the following numbers in INCREASING order of size

0.067 0.0067 0.0607 0.607 0.06

[5 marks]

Question 5

A book costs £27.90
In a promotion, it is sold with 20% off.
What is the reduced price of the book ?

[5 marks]

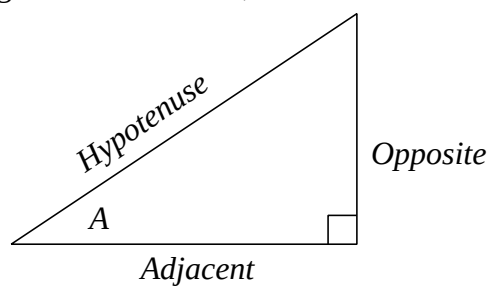
Question 6

Rachel has £4.67, Rob has £2.48 and Mike has £2.78.
Can they afford a Super Veggie Deluxe Dominoes pizza costing £9.90 ?

[5 marks]

Question 7

A right angled triangle is shown below;



A well known Trigonometry formula is;

$$\sin A = \frac{\text{Opposite}}{\text{Hypotenuse}}$$

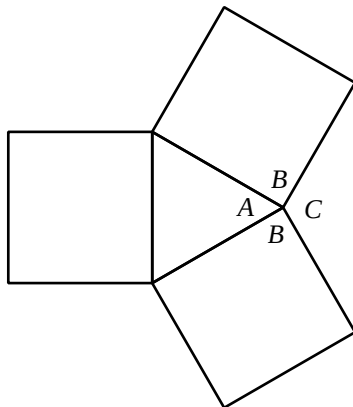
(i) Write down a similar formula for $\cos A$.

(ii) Write down a similar formula for $\tan A$.

[5 marks]

Question 8

The diagram shows an equilateral triangle surrounded by three squares.



Write down the size of the following angles;

(i) A

(ii) B

(iii) C

[5 marks]

Question 9

Showing full working, calculate

(i)

$$\frac{4}{11} + \frac{2}{5}$$

(ii)

$$\frac{9}{7} - \frac{3}{4}$$

(iii)

$$\frac{3}{7} - \frac{3}{11}$$

(iv)

$$\frac{5}{8} + \frac{2}{3}$$

[5 marks each = 20 marks]

Question 10

In this question,

$$A = \{ \text{Animals} \}$$

$$L = \{ \text{Four Legged} \}$$

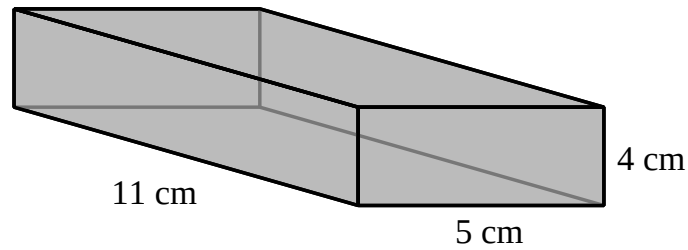
(i) Describe the set $A \cap L$ in words.

(ii) Describe something that is in $A' \cap L$

Hint : There are lots of them in every classroom.

[5 marks]

Question 11



- (a) What is the VOLUME of this cuboid ?
- (b) Carefully showing your working, find the TOTAL SURFACE AREA of the cuboid.

[15 marks]