

# COUNTDOWN TO YOUR FINAL MATHS EXAM ...

## PART 4 (2018)



	Marks	Actual	  
Q1. Proportion – recipes (Clip 18)	4		
Q2. Use of calculator (Clip 3)	2		
Q3. Standard form (Clips 19/20)	2		
Q4. Proportional reasoning	2		
Q5. Standard form (Clips 19/20)	3		
Q6. Ratio (Clips 16/17)	4		
Q7. Use of calculator (Clip 3)	3		
Q8. Ratio (Clips 16/17)	4		
Q9. Proportional reasoning	3		
Q10. Use of calculator/Index Laws (Clips 3 and 21)	4		
Q11. Proportional reasoning	2		
Q12. Use of calculator/Standard Form (Clips 3, 19 and 20)	2		
Q13. Proportion – recipes (Clip 18)	4		
Q14. Ratio (Clips 16/17)	5		
Q15. Proportional reasoning	2		
Q16. Use of calculator (Clip 3)	4		

**50**

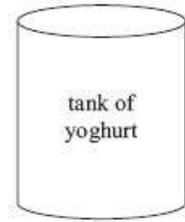
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## Questions

**Q1.** A factory makes yoghurt in a tank.

Here are the weights of the ingredients needed to make a tank full of yoghurt.

Milk	80 kg
Skimmed milk powder	2 kg
Sugar	3 kg
Stabiliser	1 kg
Fruit	10 kg



The yoghurt from the tank is put into pots. Each 1 kg of the yoghurt is used to fill 8 pots.

Is there enough yoghurt in the tank to fill 750 pots?

You must show all your working.

(4)

**Q2.** (a) (i) Work out  $3.2^2 + \sqrt{7.5}$

Write down all the figures from your calculator display.

(ii) Write your answer to (a)(i) correct to 2 significant figures.

(2)

(b) Work out the value of  $10^5$

(1)

**Q3.** Work out  $\frac{4 \times 10^9 + 3.2 \times 10^7}{1.6 \times 10^{-6}}$

Give your answer in standard form.

(2)

**Q4.** Ben and Lago have some identical packets.

Ben has 20 of the packets. The total weight of Ben's packets is 32 kg.

Lago has 25 of the packets.

Work out the total weight of Lago's packets.



(2)

**Q5.** (a) Write  $4.5 \times 10^{-3}$  as an ordinary number.

(1)

(b) Work out the value of  $(2.5 \times 10^{-2}) \div (3.8 \times 10^3)$

Give your answer in standard form correct to 3 significant figures.

**Q6.** Ewen has 48 white tiles and 16 blue tiles.

(a) Write down the ratio of the number of white tiles to the number of blue tiles.

Give your ratio in its simplest form.



(2)

(2)

The cost of each white tile was £2.00 The cost of each blue tile was £4.00

(b) Work out the ratio of the total cost of the white tiles to the total cost of the blue tiles.

(2)

**Q7.** (a) Find the square root of 2.89

(1)

(b) Work out  $6.4 \times 8.9$

(1)

(c) Find the value of  $2.7^3$

(1)

**Q8.** Mrs Collins is organising a school trip. 120 students are going on the trip.

The ratio of the number of staff to the number of students must be 1 : 15

Mrs Collins books three coaches for the trip. Each coach has 42 seats.

Are there enough seats for all the students and staff? You must show all your working.

(4)

**Q9.** Harry has a cable. The cable has a length of 16 metres.

Harry cuts the cable into two parts, part *A* and part *B*.

The length of part *A* is 5 metres. The weight of part *A* is 8 kg.

Work out the weight of part *B*.

(3)

**Q10.** (a) Work out the value of  $3.1^4$

**(1)**

(b) Simplify  $(p^3)^2$

**(1)**

(c) Simplify  $\frac{t^8}{t^3}$

**(1)**

$$2^3 \times 2^n = 2^9$$

(d) Work out the value of  $n$ .

**(1)**

**Q11.** Susie has to deliver some packages and some parcels.

The total number of packages is 4 times the number of parcels. The total number of packages and parcels is 40

Each parcel has a weight of 1.5 kg. The total weight of the packages and parcels is 37.6 kg.

Each of the packages has the same weight. Work out the weight of each package.

**(4)**

**Q12.** Work out  $\frac{(2.6 \times 10^7) - (5 \times 10^6)}{2.8 \times 10^{-3}}$

Give your answer in standard form.

**(2)**

**Q13.** Here is a list of ingredients for making 18 mince pies.

Elaine wants to make 45 mince pies.

Elaine has:

1 kg of butter,

1 kg of flour,

500 g of sugar,

600 g of mincemeat and

6 eggs

Ingredients for 18 mince pies
225 g of butter
350 g of flour
100 g of sugar
280 g of mincemeat
1 egg

Does Elaine have enough of each ingredient to make 45 mince pies? You must show clearly how you got your answer.

**(4)**

**Q14.** Seeta is organising a concert to raise money for a school and for a hospital.

A total of  $\frac{1}{20}$  of the money received from selling tickets will be spent on hiring a hall.

The rest of the money received from selling tickets will be given to the school and to the hospital in the ratio 2:3

Seeta expects to sell 1000 tickets at £23.50 each.

Work out the amount of money that Seeta expects to give to the school and to the hospital.

You must show all your working.

**(5)**

**Q15.** 7 calculators cost £41.65

Work out the cost of 12 of these calculators.

**(2)**

**Q16.** (a) Calculate the value of  $\frac{\sqrt{100 - 4.5^3}}{0.73}$

Give your answer correct to 3 decimal places.

**(2)**

(b) Calculate the value of  $\frac{1.2 \times 10^3}{3 \times 10^5}$

Give your answer in standard form.

**(2)**