Countdown to your final Maths exam ...
# Part 4 (2019)

	Marks	Actual	😠 😐 😊
Q1. Venn diagrams (Clip 53)	4		
Q2. Expand and simplify (Clip 22)	2		
Q3. Standard Form (Clips 19 and 20)	2		
Q4. Factorise, expand and simplify (Clips 22, 23, and 24)	3		
Q5. Angle facts -Parallel lines (Clip 46)	4		
Q6. Factorising/ Index Laws (Clips 23, 24 and 21)	3		
Q1. Venn diagrams (Clip 53)	4		
Q8. Standard Form (Clips 19 and 20)	4		
Q9. Expand and simplify/Factorising/Solving (Clips 22, 23 and 24)	5		
Q10. Angle facts - Parallel lines (Clip 46)	3		
Q11. Angle facts - Parallel lines (Clip 46)	4		
Q12. Simplify/Factorising/Solving (Clips 22, 23 and 24)	5		
Q13. Angle facts - Parallel lines (Clip 46)	3		
Q14. Venn diagrams (Clip 53)	4		
Q15. Expanding (Clip 22)	2		

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Q1. The numbers 1, 2, 4, 7, 8, 9, 10, 11 and 12 are put into a Venn diagram.
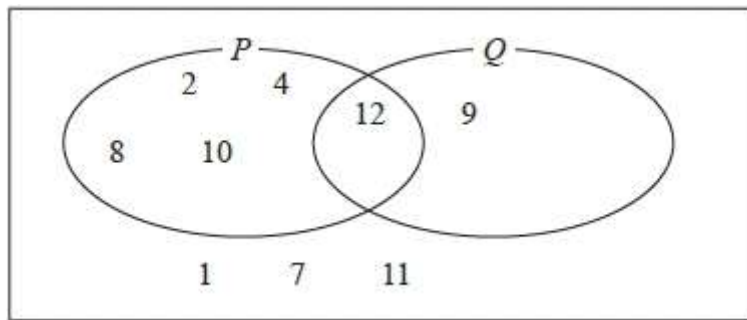
The number 3 is in set Q but not in set P.
The number 6 is in both set P and set Q.

(a) Complete the Venn diagram.

(2)

A student chooses at random a number in the completed Venn diagram.

(b) Write down the probability that this number is not in Set Q.

(2)

Q2. Expand and simplify $(x + 3)(x - 1)$

(2)

(2)

Q3. Work out the value of $\dfrac{2.645 \times 10^9}{1.15 \times 10^3}$

Give your answer in standard form.

(2)

Q4. (a) Factorise $3t + 12$

(1)

(b) Expand and simplify $7(2x + 1) + 6(x + 3)$

(2)

Q5. *APB* is parallel to *CTRD*.
PQRT is a quadrilateral.

A —————————— P ————————— B
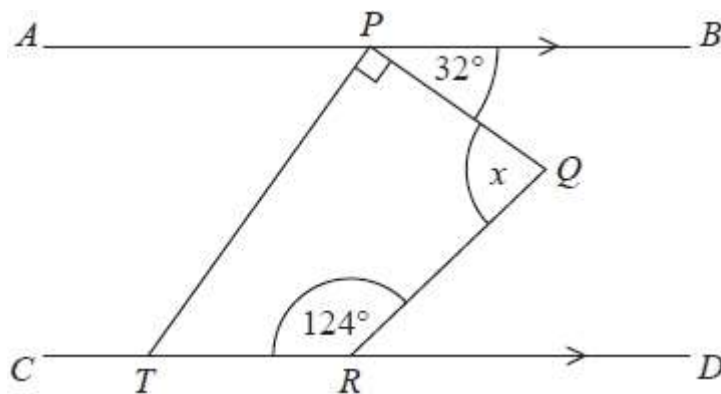
∠ 32°

x Q

124°

C ——— T ——— R ——————— D

Diagram **NOT** accurately drawn

Work out the size of the angle marked *x*. You must show your working.

(4)

Q6. (a) Factorise $y^2 + 27y$
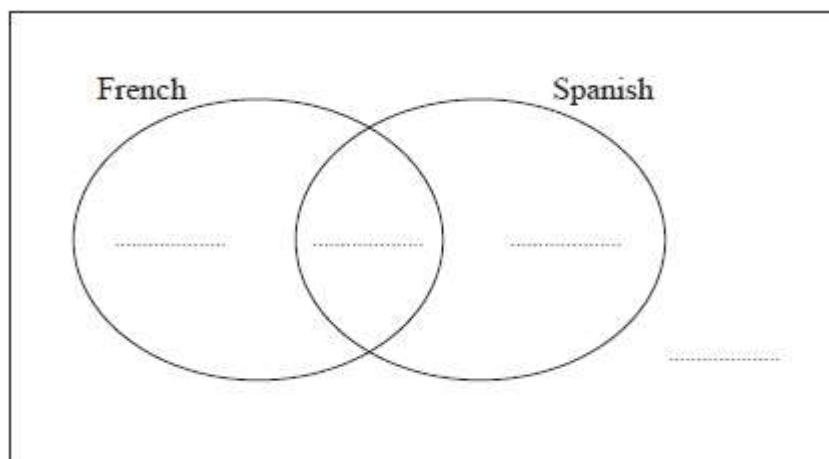
(1)

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

(1)

(c) Simplify $\dfrac{w^9}{w^4}$

(1)

Q7. There are 60 students at a college.

 20 students study both French and Spanish.
 13 students study French but not Spanish.
 A total of 43 students study Spanish.

(a) Complete the Venn diagram for this information.

French   Spanish

....

....

(3)

One of the students at the college is to be selected at random.

(b) Write down the probability that this student studies neither French nor Spanish.

(1)

Q8. (a) Write 2.673×10^4 as an ordinary number.

(1)

(b) Write 0.0704 in standard form.

(1)

(c) Calculate $(4.515 \times 10^6) \div (3.01 \times 10^{-2})$
    Give your answer in standard form.

(2)

Q9. (a) Expand $2a(a + 7)$

(1)

(b) Factorise $14b - 7$
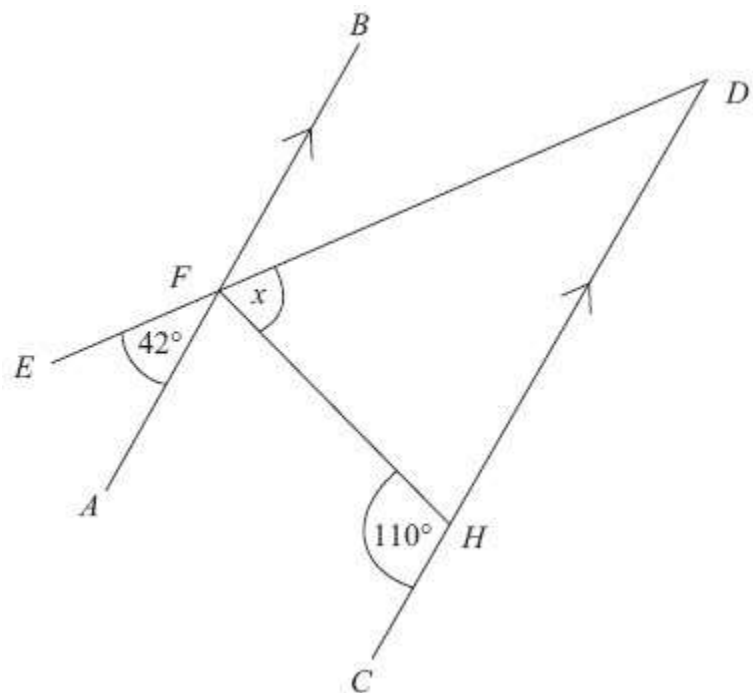
(1)

(c) Solve $9(c - 6) = 63$

(2)

(d) Simplify $3y^2 \times 4y^3$

(1)

Q10.

AFB and CHD are parallel lines.
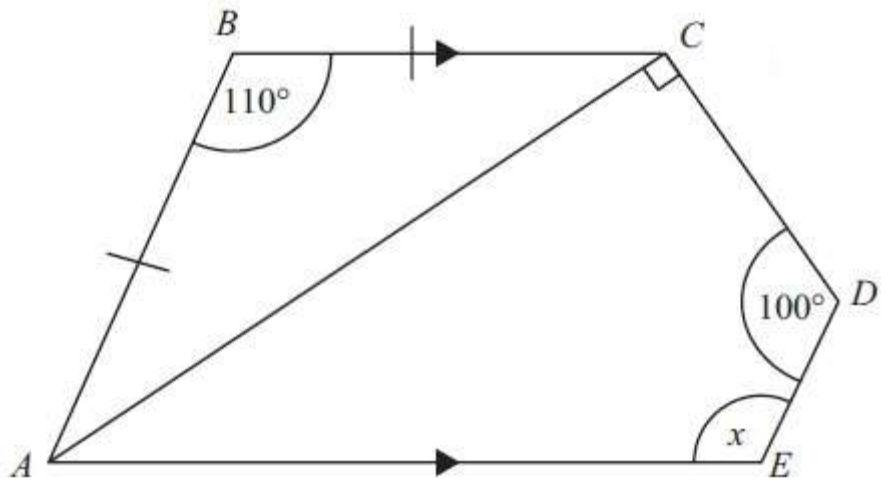EFD is a straight line.

Work out the size of the angle marked x.

(3)

Q11.

ABC is an isosceles triangle.
AB = BC.
Angle ABC = 110°.

ACDE is a quadrilateral.
Angle CDE = 100°.
Angle ACD is a right-angle.

AE is parallel to BC.

Work out the size of the angle marked x.
Give reasons for each stage of your working.

(4)

Q12. (a) Simplify $7x + 2y - 3x + 4y$

(2)

(b) Factorise $10x - 15$
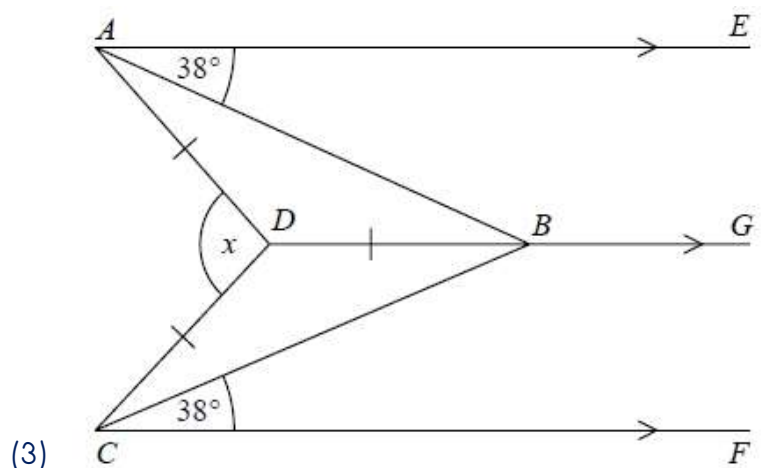
(1)

(c) Solve $5p = 3p + 8$

(2)

Q13.

AE, DBG and CF are parallel.
DA = DB = DC.
Angle EAB = angle BCF = 38°
Work out the size of the angle marked x.
You must show your working.

(3)

Q14. $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
        $A = \{\text{multiples of } 2\}$
        $A \cap B = \{2, 6\}$
        $A \cup B = \{1, 2, 3, 4, 6, 8, 9, 10\}$

Draw a Venn diagram for this information.

(4)

Q15.   Amzol thinks that $(x + 5)^2 = x^2 + 25$ for all values of x.

        Is Amzol right? You must show how you get your answer.

(2)