

Nat 5 Revision E - Paper 1 (Based on Credit 2013)

1. Evaluate

$$86.5 - 3.651 \times 20.$$

2

2. Evaluate

$$\frac{1}{2} \div 2\frac{2}{3}.$$

2

3. A group of people attended a course to help them stop smoking.

The following table shows the statistics before and after the course.

	<i>Mean number of cigarettes smoked per person per day</i>	<i>Standard deviation</i>
Before	20.8	8.5
After	9.6	12.0

2

Make **two** valid comments about these results.

4. Change the subject of the formula to r . $A = 4\pi r^2$.

2

5. 150 patients have been given a flu vaccine.

The data is shown in the table below.

<i>AGE</i>	<i>GENDER</i>	
	<i>male</i>	<i>female</i>
5 or under	4	3
6 – 15	7	8
16 – 59	37	47
60 or over	12	32

What is the probability that

- (a) a patient given the flu vaccine was male **and** aged 60 or over?

1

- (b) a patient given the flu vaccine was aged 5 or under?

1

6. Joan buys gold and silver charms to make bracelets.

2 gold charms and 5 silver charms cost £125.

- (a) Let g pounds be the cost of one gold charm and s pounds be the cost of one silver charm.

Write down an equation in terms of g and s to illustrate the above information.

1

4 gold charms and 3 silver charms cost £145.

- (b) Write down another equation in terms of g and s to illustrate this information.

1

- (c) Hence calculate the cost of each type of charm.

3

7. (a) Expand and simplify

$$(2x - 5)(x^2 + 3x - 7).$$

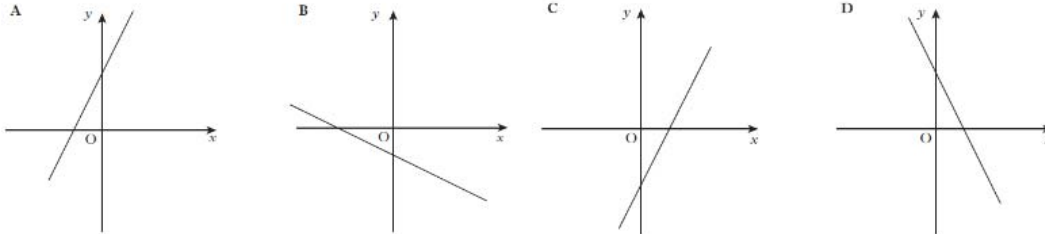
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- (b) Solve the inequality

$$4x - 5 \leq 7x - 20.$$

3

8. Four straight line graphs are shown below.



Which one of these above could represent the line with equation $2x + y = 3$?

3

Give two reasons to justify your answer.

9. Quick-Smile photographers charge the following rates:

- 50p per photograph for the first 12 photographs printed
- 35p per photograph for any further photographs printed
- £4.25 for a CD of the photographs.

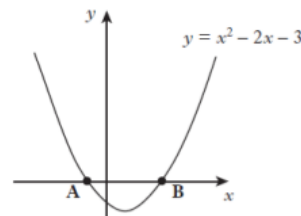
- (a) How much will it cost to have 16 photographs printed plus a CD?

2

- (b) Find a formula for C, the cost in pounds, of having x photographs printed (where x is greater than 12) plus a CD.

3

10. The parabola with equation $y = x^2 - 2x - 3$ cuts the x -axis at the points A and B as shown in the diagram.



- (a) Find the coordinates of A and B.

4

- (b) Write down the equation of the axis of symmetry of $y = x^2 - 2x - 3$.

1

11. Jenny is doing calculations using consecutive numbers.

She notices a pattern which always gives an answer of 1.

$$\text{Using } 2, 3, 4 \text{ gives } 3^2 - 2 \times 4 = 1.$$

$$3, 4, 5 \text{ gives } 4^2 - 3 \times 5 = 1.$$

$$4, 5, 6 \text{ gives } 5^2 - 4 \times 6 = 1.$$

- (a) Using 8, 9, 10, write down a similar pattern.

1

- (b) Using n , $(n+1)$, $(n+2)$, show that the answer is 1 for any three consecutive numbers.

3

12. The roots of the equation $4x^2 + px + 2 = 0$ are equal. Find the value of p as a surd in its simplest form.

3