

2nd Year Mathematics
End of Year Assessment – June 2018

Paper
Non-calculator paper
Maximum mark: 53

Name _____

Time allowed: 1 hour

Remember to show all your working out clearly

Mastery

1. Solve the following equations.

(a) $5a + 22 = -3$

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Answer a =

(2)

(b) $4b - 12 = 14b + 6$

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Answer b =

(2)

(c) $7(7c - 3) = 35$

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Answer c =

(3)

(d) $\frac{d-5}{8} = 4$

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Answer m =

(2)

(Total 9 marks)

2. (a) Express 144 as the product of prime factors.
Write your answer in index form.

Answer

(3)

- (b) You are given that $400 = 2^4 \times 5^2$

Find the lowest common multiple (LCM) of 144 and 400.

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Answer

(2)

(Total 5 marks)

3. Perform the following calculations:

- a) -3×7
- b) $-4 - 15$
- c) $-57 \div -8$

(Total 3 marks)

4. (a) Work out the value of $3m - 8n$ when $m = 6$ and $d = -\frac{1}{2}$

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Answer

(2)

(b) Factorise fully $9x^2 + 15x$

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Answer

(2)

(Total 4 marks)

5. Calculate the following:

a) $\frac{5}{6} - \frac{3}{11}$

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(2)

b) $8\frac{3}{4} \div 2\frac{1}{2}$

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(3)

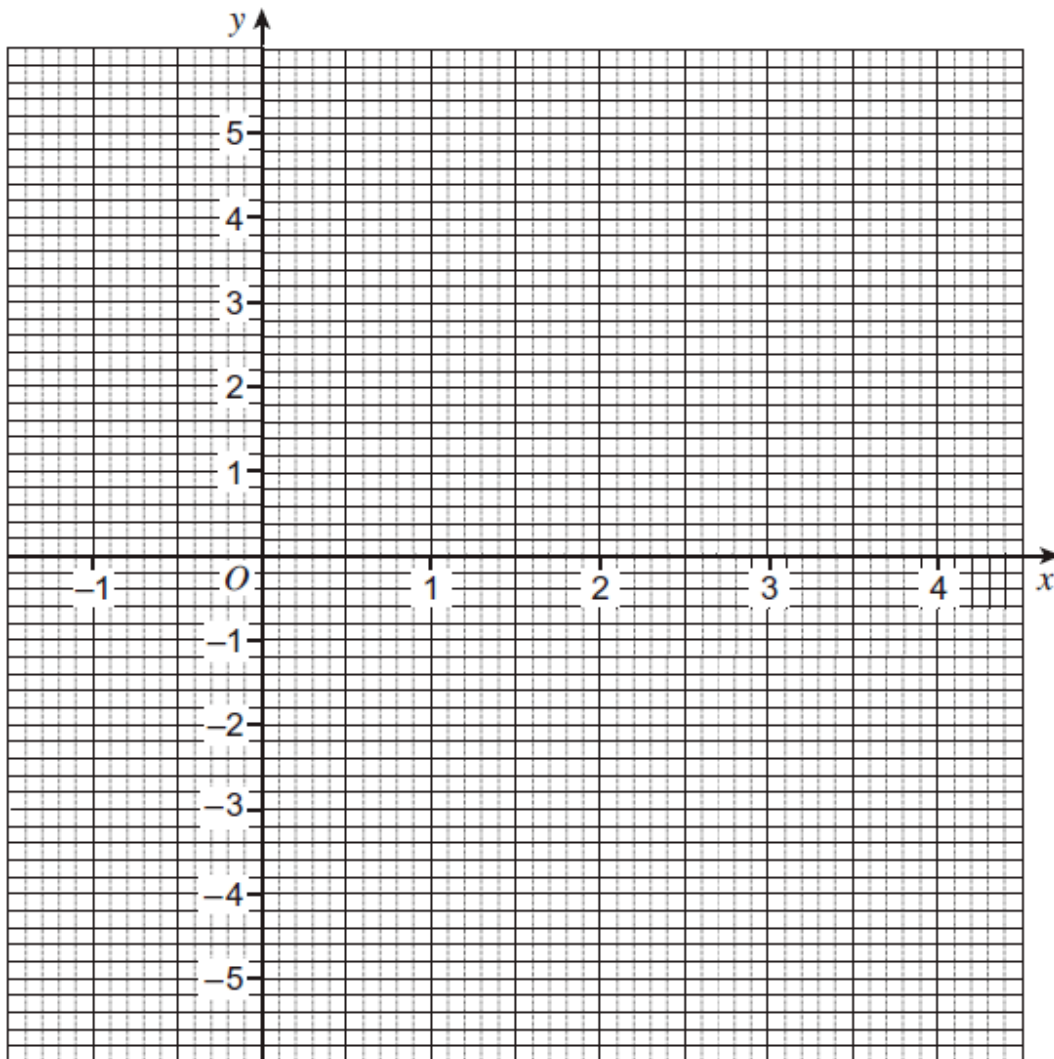
(5 marks)

6. (a) Complete the table of values for the straight line graph $y = 3 - 2x$

x	-1	0	1	2	3	4
y		3		-1		-5

(2)

(b) On the grid draw the graph of $y = 3 - 2x$ for values of x from -1 to 4.



(2)
(Total 4 marks)

7. At the Haddonfield, Illinois branch of WalMart, five pumpkins have a retail price of \$ \$4.60.

How much will six pumpkins cost?

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Answer \$

(Total 3 marks)

Problem Solving

8. Fox and Dana divide up their marbles in the ratio 7 : 5. Fox gets 12 more marbles than Dana. How many sweets does Dana get?

Answer:

(3 marks)

9.

In the diagram, PQR and PST are straight lines.
 QS and RT are parallel lines.
Angle $QRT = 70^\circ$.
Angle $QST = 120^\circ$.

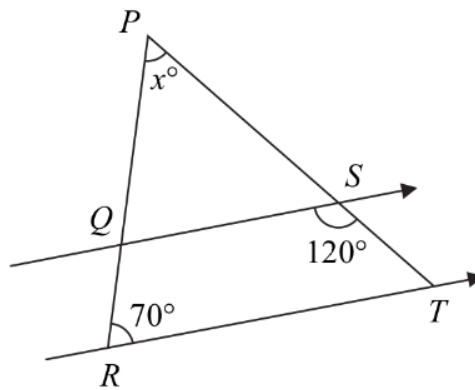


Diagram **NOT** accurately drawn

Calculate the value of x .

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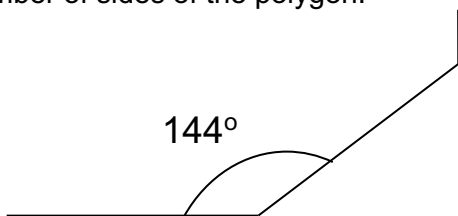
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(3 marks)

10. The diagram shows part of a regular polygon (not to scale). Each interior angle is 144° . Calculate the number of sides of the polygon.



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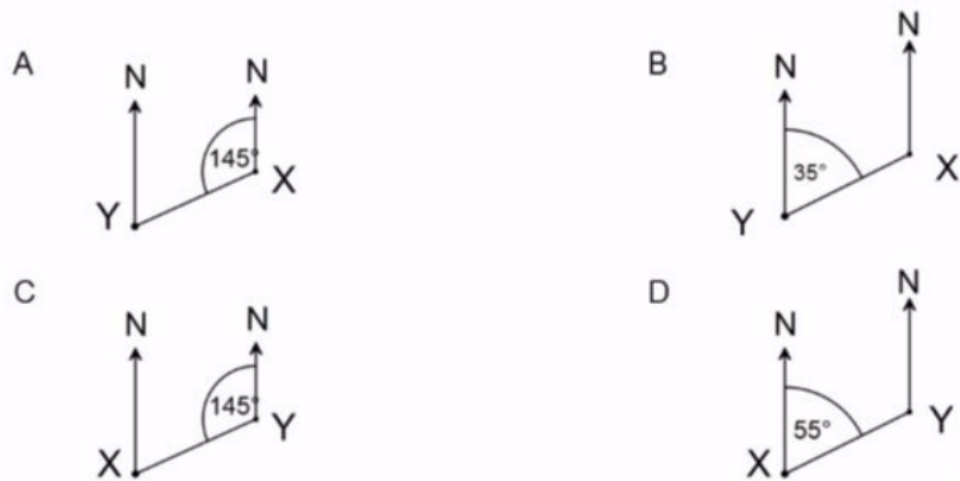
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Answer..... (3 marks)

11. Five positive integers have a mode of 3, a median of 3, a mean of 4, and a range of 10. Find the numbers.

Answer: (3 marks)

- 12.

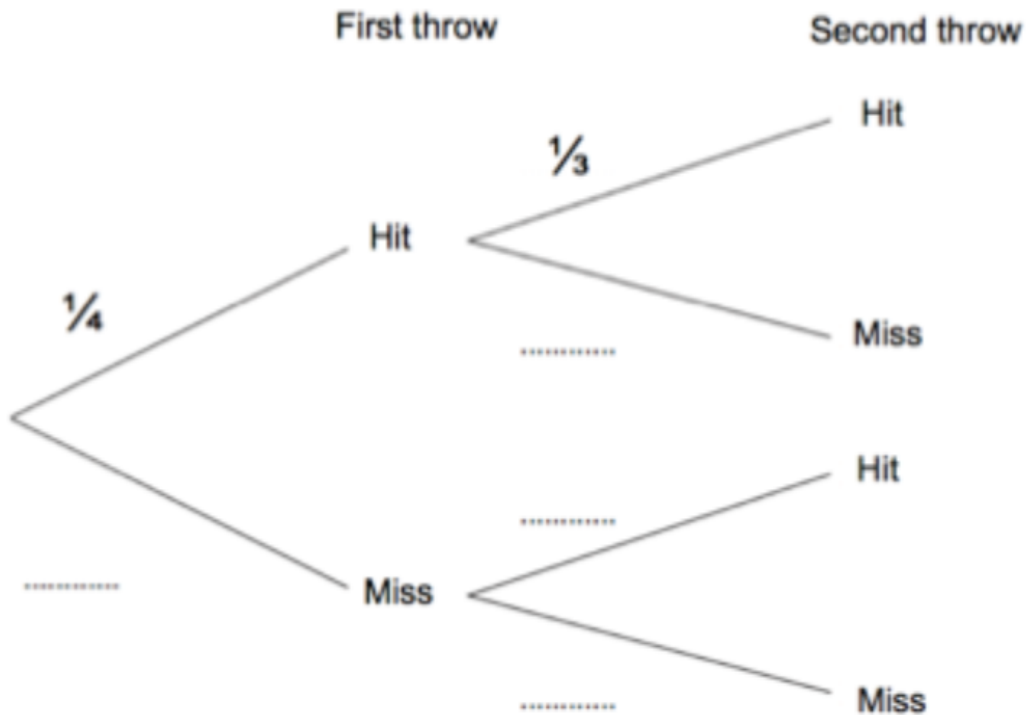


The bearing of X from Y is 215° . Which diagram above shows this? Draw a circle around A, B, C or D to indicate your answer.

(1 mark)

13. Jennifer is playing darts. She throws two darts, aiming for the bullseye. The probability that she hits the bullseye on her first throw is $\frac{1}{4}$ whilst the probability that she hits the bullseye on her second throw is $\frac{1}{3}$.

a) Complete the tree diagram below.



(2)

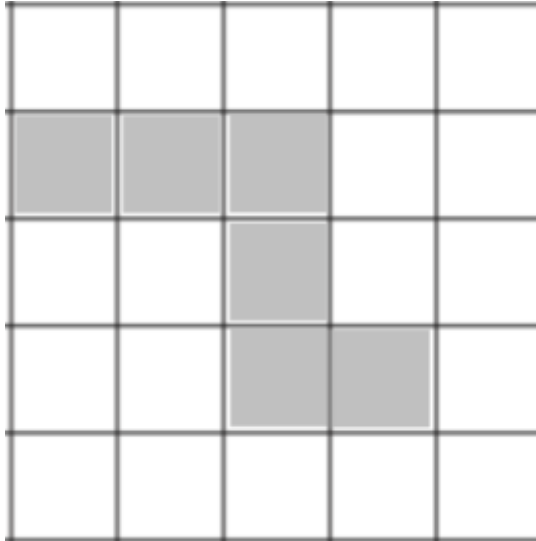
b) Find the probability that she hits the bullseye at least once with her two darts.

Answer

(3)
(Total 5 marks)

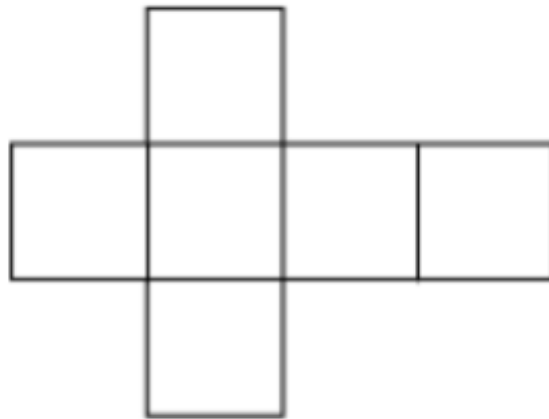
14.

(a) Shade one more square in the diagram below to make a pattern with rotational symmetry two.



(1)

(b) The diagram below shows the net of a cube. Add some more squares to the diagram so it has rotational symmetry of order four.



(1)
(Total 2 marks)

END OF PAPER