

CSSE

The Consortium of Selective Schools in Essex

MATHEMATICS PAPER FOR 2021 ENTRY – TEST 2

Name: _____

Candidate Number: _____

Primary School: _____

Boy or Girl: _____

Date of Birth: _____

Today's Date: _____

Test Taken At: _____

READ THE FOLLOWING CAREFULLY:

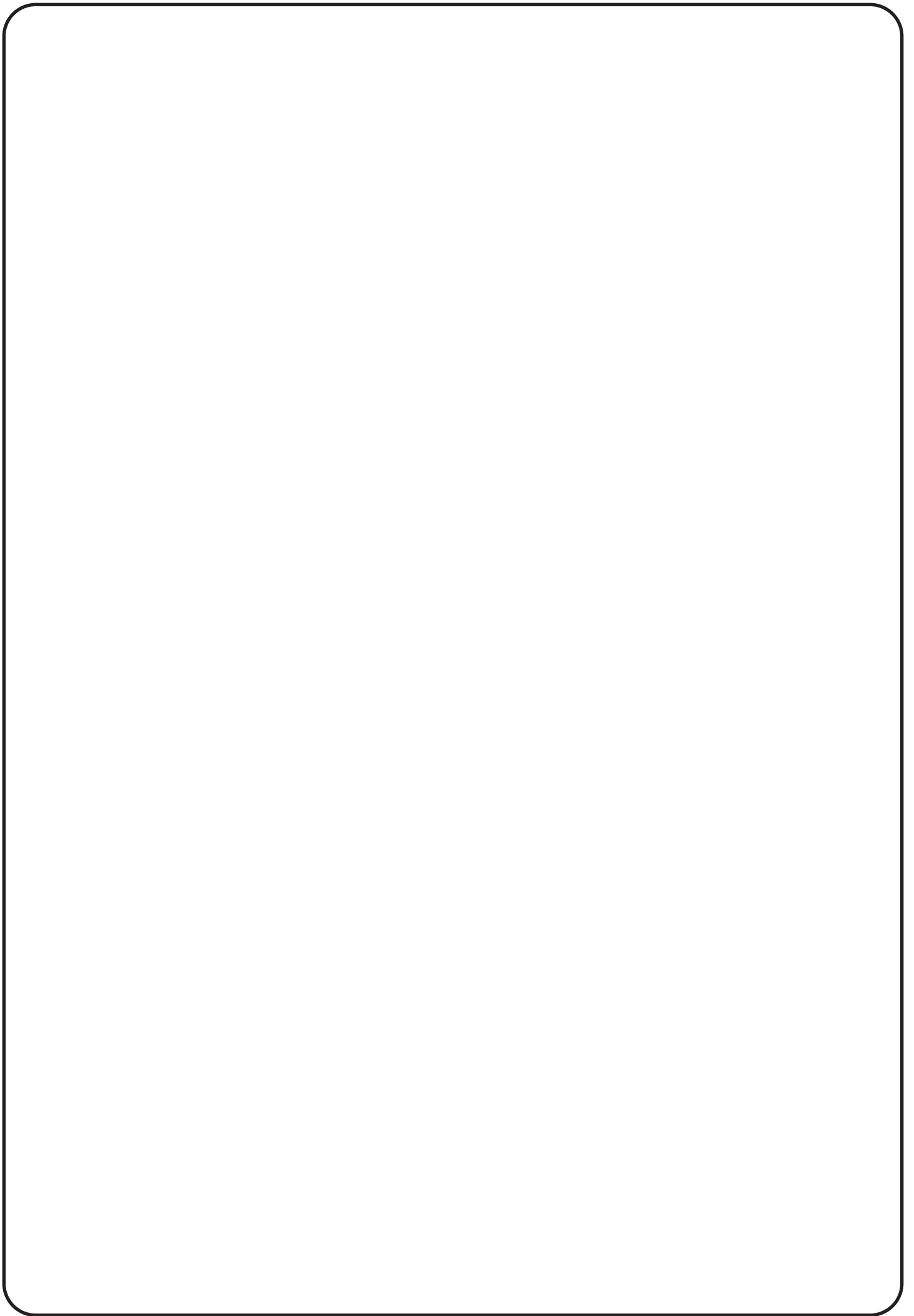
1. **Do not open this booklet until you are told to do so.**
2. You may work the questions out in your head, or by writing on the white area around the question.
3. **Work as quickly and as carefully as you can.**
4. Make any alterations to your answers **clearly**. You will not lose marks for crossing out.
5. You will have **60 minutes** to do the test. If you find you cannot do a question, **do not waste time on it but go on to the next one.**
6. **Once the test has begun, you should not ask about questions in the test.**
7. **The use of electronic calculators of any description (including calculator watches) is NOT permitted.**

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NOT TO BE FILLED IN BY PUPIL

PAGE	SCORE	
	R	W
1 (7)		
2 (6)		
3 (5)		
4 (5)		
5 (3)		
6 (5)		
7 (5)		
8 (4)		
9 (6)		
10 (7)		
11 (3)		
12 (4)		
TOTAL (60)		
INITIALS OF MARKER(S)		



**You have sixty minutes to complete this paper.
Do your working out in the spaces on the paper.**

Question (and working space)	ANSWER	Please do not write in this space
<p>1 (a) Calculate</p> $2643 + 88 =$		
<p>(b) Calculate</p> $1097 - 368 =$		
<p>(c) Calculate</p> $322 \div 7 =$		
<p>2 (a) Calculate the value of</p> $2\frac{1}{3} - 1\frac{5}{6} =$		
<p>(b) Calculate the value of</p> $\frac{2}{3} + \frac{7}{12} =$		
<p>(c) Fill in the box to make the sum work.</p> $7 \times \square = 4\frac{2}{3}$		
<p>(d) Fill in the boxes to make the sum work.</p> $\begin{array}{r} 3 \square 5 \\ + \square 1 7 \\ \hline \square 1 8 \square \end{array}$	<p>You must use boxes.</p>	<p>R W (7)</p>

Question (and working space)

ANSWER

Please do not write in this space

3 7^5 means $7 \times 7 \times 7 \times 7 \times 7$.
Fill in the boxes to make these sums work.

(a) $3^{\square} = 243$

(b) $2^{\square} \div 8 = 16$

4 This question is about the following numbers:

$\frac{2}{5}$ 0.31 $\frac{1}{3}$ $\frac{3}{8}$ 0.42

(a) Which is the smallest number?

(b) Which is the number closest in value to 0.35?

5 (a) How many cm are there in 4.721m?

.....cm

(b) A rectangle has width 40mm and its area is 30cm^2 .
What is its length in cm?

.....cm

(6)

R
W

Question (and working space)

ANSWER

Please do not write in this space

6 A supermarket offers the following prices for different kinds of fruit:

**A PACK OF 4
APPLES for £1**

**BANANAS
28p EACH**

**A PACK OF 8
TANGERINES for £2.40**

**A PACK OF 6
PEARS for £2**

(a) What will it cost to get 18 pears, 8 apples and 10 bananas?

£.....

(b) Which is the cheapest fruit if I want to buy 24 of the same fruit?

(c) If I spent exactly £6.84 on a combination of fruit in the supermarket how many bananas must I have bought?

7 If A is double B and B is three times C and $A+B+C = 50$ find:

(a) C

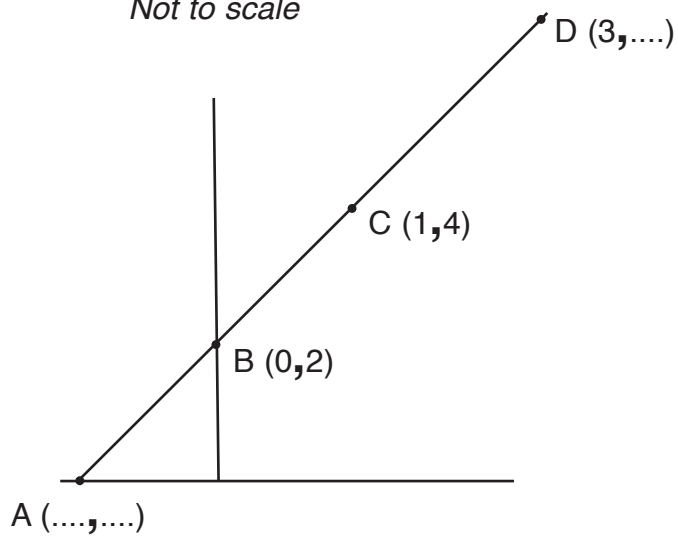
(b) A

(5)

R
W

8 ABCD is a straight line drawn on a graph. The co-ordinates of B and C are shown. Complete the co-ordinates of A and D.

Not to scale



A (.....,.....)

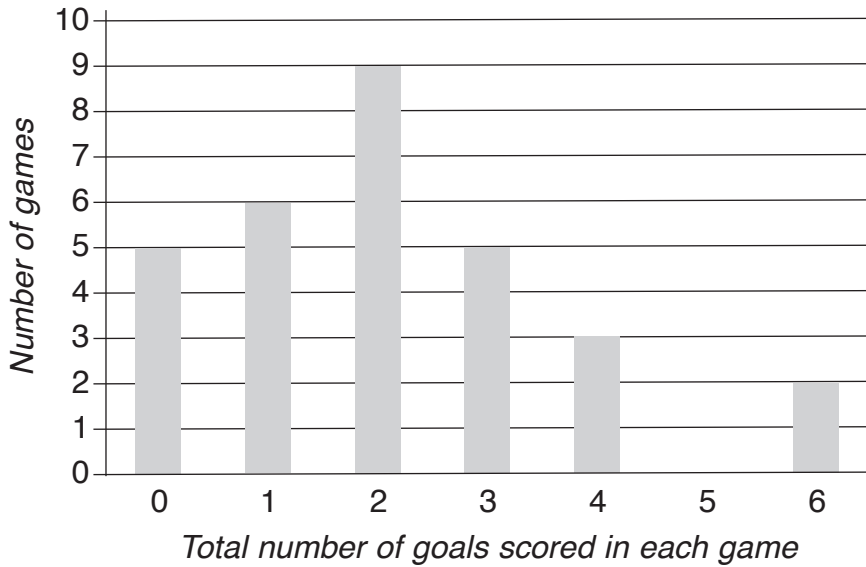
D (...**3**,.....)

9 The total flying time from London to Singapore via Dubai is 18 hours. The flight from London to Dubai takes 30% of the flying time. The flight from London leaves at 2.10pm.

(a) If Dubai is 4 hours ahead of London time, find in local time, the arrival time in Dubai.

(b) If there is a stop in Dubai of 2 hours and Singapore is 9 hours ahead of London time, find in local time, the arrival time in Singapore.

10 Stefan kept a record of the total goals scored in each game of the premier league over four weekends. He made a bar chart of his results.



So, for example, the first bar shows that there were five games in which no goals were scored.

(a) What was the total number of games over the four weekends?

(b) What was the total number of goals scored over the four weekends?

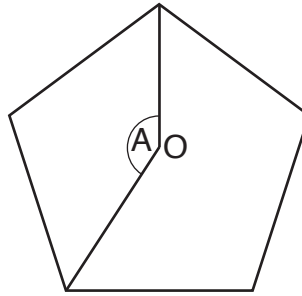
(c) What was the average (mean) number of goals scored per game? Give your answer to one decimal point.

Question (and working space)

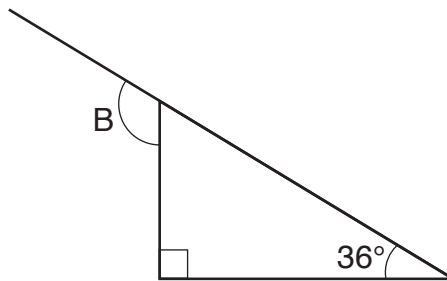
ANSWER

Please do not write in this space

- 11** (a) The shape is a regular pentagon with centre O. How many degrees is angle A?



- (b) How many degrees is angle B?



- 12** (a) Six French rowers have a total weight of 570kg. Find their average (mean) weight.

.....kg

- (b) Four American rowers have an average weight of 90kg. When they join up with two British rowers the average weight of all six rowers is 88kg. What is the average weight of the two British rowers?

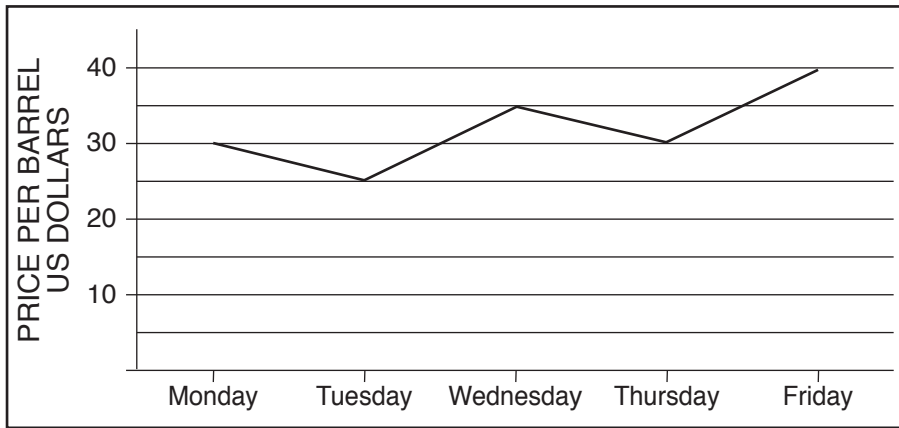
.....kg

- (c) Two steel tubes have an average weight of 12kg. The heavier one weighs twice as much as the lighter one. What does the lighter one weigh?

.....kg

R
W
(5)

13 The graph shows the price of crude oil over a week.



(a) Find the cost in US dollars of five barrels of oil on Wednesday.

.....
US dollars

(b) Find the number of barrels of oil which could be bought for \$1260 on Monday.

.....

(c) On Friday £1 = \$1.25. Find the cost of three barrels of oil in pounds and pence on Friday.

£.....

14 Find numbers x and y if they add up to 71 and have a difference between them of 13 and x is larger than y .

$x =$

$y =$

Question (and working space)

ANSWER

Please do not write in this space

15 For each of these statements, say if they are **always** true, **sometimes** true or **never** true:

(a) When you multiply an odd number by 101, you get an odd number.

.....
true

(b) When you add two square numbers, you get a square number.

.....
true

(c) When you multiply two square numbers you get a square number.

.....
true

(d) When you take the average of two prime numbers you get a prime number.

.....
true

R
W
(4)

16 Two sequences are written out as follows:

	Rule	1st term	2nd term	3rd term
Sequence A	add 3 each term	5	8	11
Sequence B	subtract 2 each term	100	98	96
Sum of sequence A and B		105	106	107

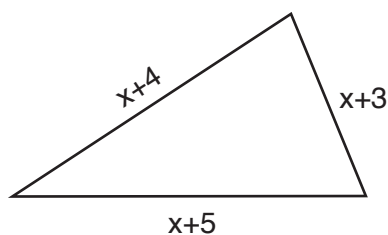
(a) What would be the 10th term in sequence A?

(b) At what term would sequence A reach 101?

(c) At what term would sequence A equal sequence B?

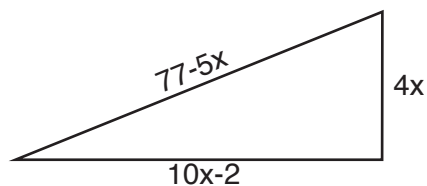
(d) At what term would the sum of sequence A and sequence B equal 1000?

17 (a) The triangle below has a perimeter (length of all three sides added up) of 75. Find x.



$x = \dots\dots\dots$

(b) The triangle below has a perimeter of 120. Find x.



$x = \dots\dots\dots$

Question (and working space)

ANSWER

Please do not write in this space

18 (a) Calculate

$$2.6 + 8.34 =$$

(b) Calculate

$$3.1 - 0.64 =$$

(c) Calculate

$$3.1 \times 1.2 =$$

(d) Calculate

$$16.8 \div 1.2 =$$

19 (a) Find 15% of £140.

£.....

(b) A coat costs £45. Its price is increased by 20%. Find the new price.

£.....

(c) The cost of a jacket is increased by 20%. After the increase it costs £108. What did it cost before the increase?

£.....

(7)

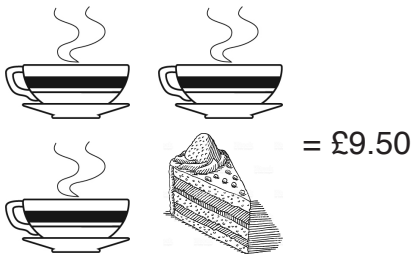
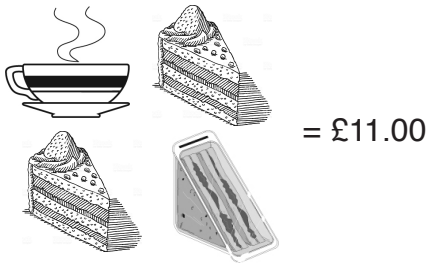
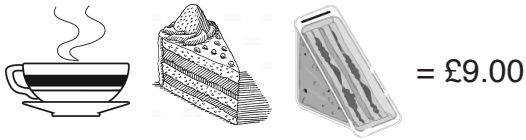
R
W

Question (and working space)

ANSWER

Please do not write in this space

20 Milly runs a cafe. A customer ordered a cup of coffee, a slice of cake and a sandwich which cost £9.00. The next customer ordered a coffee, two slices of cake and a sandwich which cost £11.00. A third customer ordered three cups of coffee and a slice of cake costing £9.50. What are the individual prices of coffee, cake and a sandwich?



(a) How much does one slice of cake cost?

£.....

(b) How much does one cup of coffee cost?

£.....

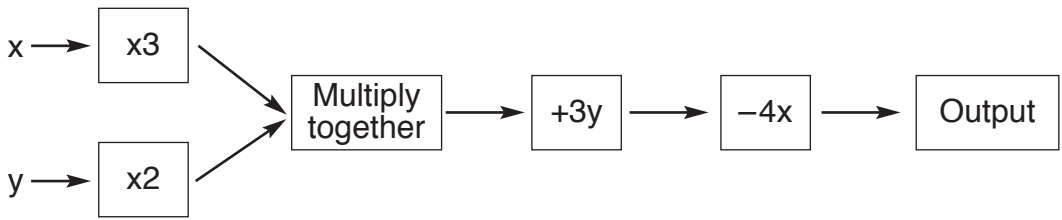
(c) How much does one sandwich cost?

£.....

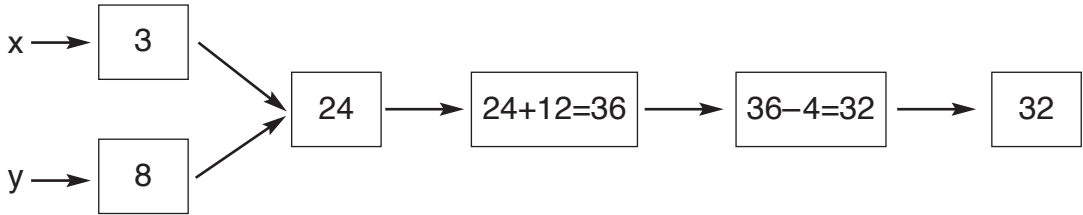
R
W

(3)

21 A function machine has two inputs x and y and one output:



So for example if $x = 1$, $y = 4$ then the output = 32



(a) Find the output if $x = 2$ and $y = 1$.

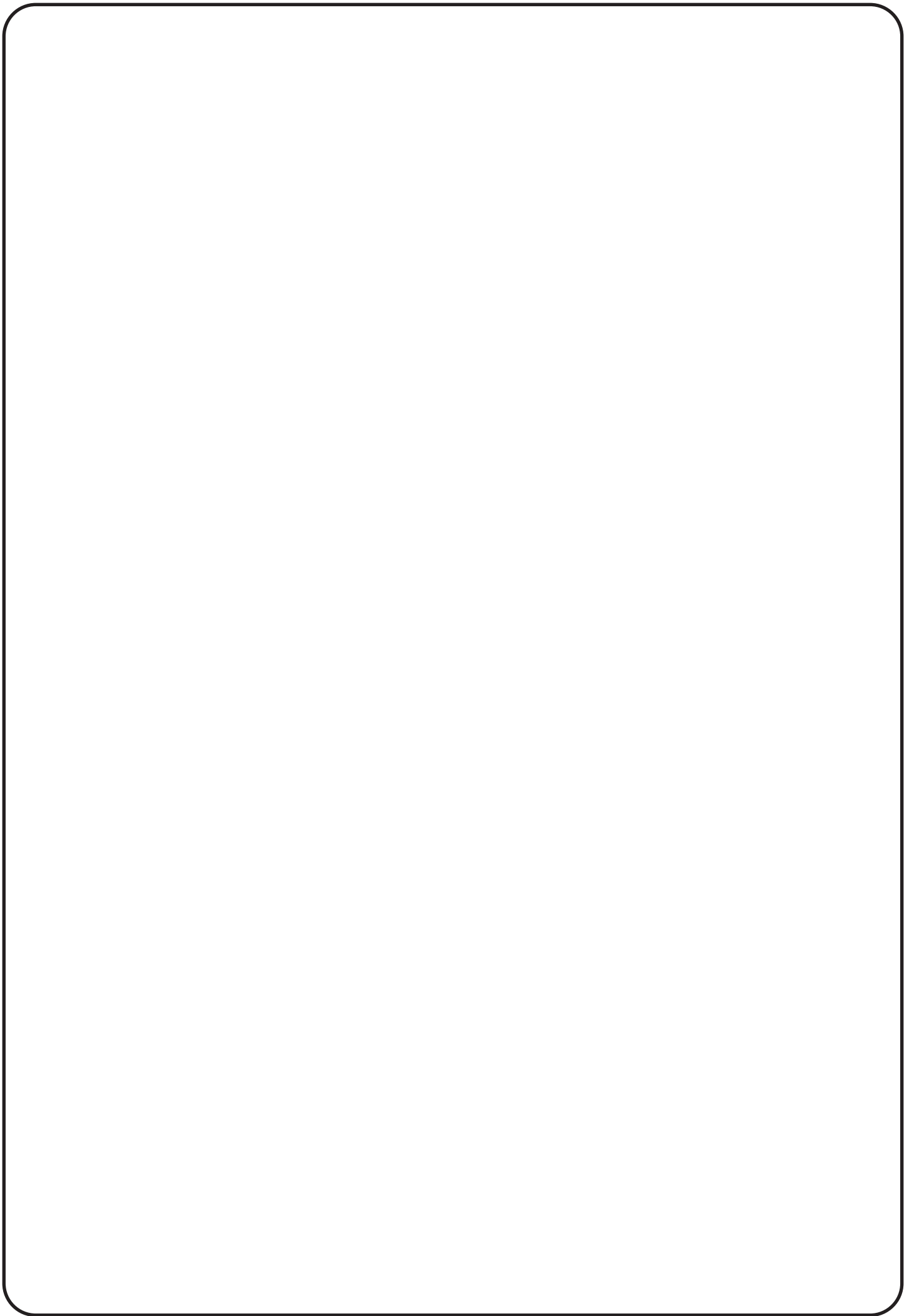
(b) Find the output if $x = -2$ and $y = 3$.

(c) If $x = 8$ and the output = 70, find y .

$y = \dots\dots\dots$

(d) If x is a positive whole number and $x = y$ and the output = 145 find x .

$x = \dots\dots\dots$





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