A screenshot of a cell phone

Description automatically generated

**Manipulating fractions**

**Instructions**

* Use **black** ink or ball-point pen.
  + **Fill in the boxes** at the top of this page with your name,  
    centre number and candidate number.
* Answer **all** questions.
* Answer the questions in the spaces provided  
  *– there may be more space than you need.*
* You must **show all your working.**
* Diagrams are **NOT** accurately drawn, unless otherwise indicated.
* If your calculator does not have a *π* button, take the value of *π* to be3.142

unless the question instructs otherwise.

**Information**

* The total mark for this paper is **37**. There are **14** questions.
* Questions have been arranged in an ascending order of mean difficulty, as found by all students in the June 2017–November 2019 examinations.
* The marks for **each** question are shown in brackets  
  *– use this as a guide as to how much time to spend on each question.*

**Advice**

1. Read each question carefully before you start to answer it.
2. Keep an eye on the time.
3. Try to answer every question.
4. Check your answers if you have time at the end.

**1** Work out  of 720

.......................................................

**(Total for Question 1 is 1 mark)**

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**2** Here are four fractions.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Write these fractions in order of size.

Start with the smallest fraction.

..........................................................................................................................................

**(Total for Question 2 is 2 marks)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3** Here are four fractions.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Write the fractions in order of size.

Start with the smallest fraction.

..............................................................................................................

**(Total for Question 3 is 2 marks)**

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**4** Write the following fractions in order of size.

Start with the smallest fraction.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

......................................................................................................................................

**(Total for Question 4 is 2 marks)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**5 ** of a number is 32.

Find the number.

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**(Total for Question 5 is 2 marks)**

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**6** Here are some fractions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

One of these fractions is **not** equivalent to 

(*a*)Which fraction?

......................................................

**(1)**

(*b*)Work out 

......................................................

**(2)**

**(Total for Question 6 is 3 marks)**

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**7** (*a*)Work out 

.......................................................

**(2)**

(*b*)Work out 

Give your answer as a fraction in its simplest form.

.......................................................

**(2)**

**(Total for Question 7 is 4 marks)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8** (*a*)Work out 

.......................................................

**(1)**

(*b*)Work out 

.......................................................

**(2)**

**(Total for Question 8 is 3 marks)**

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**9** Jim thinks of a number.

 of Jim’s number is 48.

Work out of  Jim’s number.

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**(Total for Question 9 is 2 marks)**

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**10** Work out 

Give your answer as a mixed number.

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**(Total for Question 10 is 3 marks)**

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**11** (*a*)Work out 2 + 1

.......................................................

(**2**)

(*b*)Work out 1 ÷ 

Give your answer as a mixed number in its simplest form.

.......................................................

(**2**)

(**Total for Question 11 is 4 marks**)

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**12** Work out 

.........................................

**(Total for Question 12 is 3 marks)**

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**13** Here are two fractions.

 

Work out which of the fractions is closer to 1

You must show all your working.

**(Total for Question 13 is 3 marks)**

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**14** (*a*)Work out 

.......................................................

**(2)**

(*b*)Write down the value of 2–3

.......................................................

**(1)**

**(Total for Question 14 is 3 marks)**

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**TOTAL MARKS FOR PAPER: 37**