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**FUNCTIONAL SKILLS**

Maths Level 1



**Area: Numbers and the number system**

Criterion: Recognise and use positive and negative numbers

**Identifying and comparing positive and negative numbers**

**Positive numbers:** numbers greater than 0. Examples include 1, 5, and 100

**Negative numbers:** numbers less than 0. They have a minus sign (-) in front of them. Examples include -1, -5, and -100

If we count backwards from 0, -1 would be the first negative number, followed by -2, -3, -4 and so on.

**Comparing positive and negative numbers**

When we are comparing positive and negative numbers, we should use the following symbols:

< less than

> more than

= equal to

When comparing different positive and negative numbers, there are 3 rules to remember:

**Positive versus positive**: higher positive numbers are greater.

For example, 77 is greater than 73

77 > 73

**Negative versus negative**: higher negative numbers are smaller.

For example, -12 is greater than -15

-12 > -15

**Positive versus negative**: any positive number is always greater than any negative number.

For example, 1 is greater than -1

1 > -1

**Question 1**

Circle the negative numbers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 17 | -1.7 | 7.1 | -17 | 1.07 | -0.17 |

(Show your working out.)

(1 mark)

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**Question 2**

Use > or < to complete the following.

18 -19

(Show your working out.)

(1 mark)

**Question 3**

Use < or > to complete the following.

-16 -11

(Show your working out.)

(1 mark)

**Adding positive and negative numbers**

When **adding 2 positive numbers**, the result is positive.

For example, 3 + 2 = 5

When **adding 2 negative numbers**, the result is negative.

For example, (-3) + (-2) = -5

When **adding a positive number to a negative number**, find the difference between the numbers and count forwards the amount you’re adding.

For example, (-3) + 2 = -1

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

When adding a **negative number to a positive number**, find the difference between the numbers and count backwards the amount you’re adding.

For example, 4 + (-2) = 2

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |

**Question 4**

Calculate 6 + (-12)

(Show your working out.)

(1 mark)

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**Question 5**

Calculate 7 + (-3)

(Show your working out.)

(1 mark)

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**Question 6**

Calculate (-9) + 12

(Show your working out.)

(1 mark)

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**Question 7**

Calculate (-10) + (-12)

(Show your working out.)

(1 mark)

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**Subtracting positive and negative numbers**

When **subtracting a positive number from another positive number**, follow normal subtraction rules.

For example, 5 - 3 = 2

When **subtracting a negative number from a positive number**, add the absolute values.

For example, 2 - (-3) = 5

When **subtracting a positive number from a negative number**, treat it like adding 2 negatives.

For example, (-5) - 3 = -8

When **subtracting a negative number from another negative number**, treat it like adding a positive number.

For example, (-5) - (-3) = -2

**Question 8**

Calculate (-15) - 9

(Show your working out.)

(1 mark)

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**Question 9**

Calculate 9 - (-5)

(Show your working out.)

(1 mark)

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**Question 10**

Calculate 15 - 18

(Show your working out.)

(1 mark)

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**Question 11**

Calculate (-6) - (-20)

(Show your working out.)

(1 mark)

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**Multiplying positive and negative numbers**

**Positive x positive = positive**

Example: 3 x 4 = 12

**Negative x negative = positive**

Example: (-3) x (-4) = 12

**Positive x negative = negative**

Example: 3 x (-4) = -12

**Negative × positive = negative**

Example: (-3) x 4 = -12

Why these rules work

**Same signs (both positive or both negative):** the product is always positive.

**Different signs (1 positive and 1 negative):** the product is negative because you are combining a positive number with a negative effect.

**Question 12**

Calculate (-5) x 6

(Show your working out.)

(1 Mark)

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**Question 13**

Calculate (-8) x (-4)

(Show your working out.)

(1 mark)

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**Question 14**

Calculate (-6) x 7

(Show your working out.)

(1 mark)

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**Question 15**

Calculate (-3) x (-9)

(Show your working out.)

(1 mark)

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**Dividing positive and negative numbers**

**Positive ÷ positive = positive**

Example: 12 ÷ 3 = 4

**Negative ÷ negative = positive**

Example: (-15) ÷ (-3) = 5

**Positive ÷ negative = negative**

Example: 12 ÷ (-3) = (-4)

**Negative ÷ positive = negative**

Example: (-15) ÷ 3 = (-5)

Why these rules work

**Same signs (both positive or both negative):** the answer is always positive.

**Different signs (1 positive and 1 negative):** the answer is negative.

**Question 16**

Calculate (-20) ÷ 4

(Show your working out.)

(1 mark)

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**Question 17**

Calculate (-40) ÷ (-10)

(Show your working out.)

(1 mark)

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**Question 18**

Calculate 72 ÷ (-9)

(Show your working out.)

(1 mark)

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**Question 19**

Calculate 100 ÷ 10

(Show your working out.)

(1 mark)

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**Exam practice 1**

You are ordering balloons for a party. You order a total of 200 balloons.

* 45% of the balloons are blue
* are white
* The remainder of the balloons are silver

How many balloons are silver?

(Show your working out.)

(4 marks)

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**Exam practice 2**

You are a member of a painting club. You have been asked to repaint a wall in the community centre.

There are 8 wall sections.

Each section will need 3 litres of paint.

Your club gets a 20% discount on the price of the paint.

Each tin of paint costs £12 (4 litres).

You have a budget of £70.

Do you have enough money to paint all of the wall sections?

(Show your working out.)

(6 marks)

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**Answers**

**Identifying and comparing positive and negative numbers**

**Question 1**

-1.7

-17

-0.17

**Question 2**

18 **>** -19

**Question 3**

-16 **<** -11

**Adding positive and negative numbers**

**Question 4**

6 + (-12) = -6

**Question 5**

7 + (-3) = 4

**Question 6**

(-9) + 3 = 12

**Question 7**

(-10) + (-12) = -22

**Subtracting positive and negative numbers**

**Question 8**

(-15) - 9 = -24

**Question 9**

9 - (-5) = 14

**Question 10**

15 - 18 = -3

**Question 11**

(-6) - (-20) = 14

**Multiplying positive and negative numbers**

**Question 12**

(-5) x 6 = -30

**Question 13**

(-8) x (-4) = 32

**Question 14**

(-6) x 7 = -42

**Question 15**

(-3) x (-9) = 27

**Dividing positive and negative numbers**

**Question 16**

(-20) ÷ 4 = -5

**Question 17**

(-40) ÷ (-10) = 4

**Question 18**

72 ÷ (-9) = -8

**Question 19**

100 ÷ 10 = 10

**Exam practice**

**Exam practice 1**

Calculate the number of blue balloons.

45% of 200 = 90

Calculate the number of white balloons.

of 200 = 40

Calculate how many balloons are remaining.

90 + 40 = 130

200 – 130 = 70

70 balloons are silver.

**Exam practice 2**

Calculate the total amount of paint needed.

8 x 3 = 24 litres

Calculate the number of tins required.

24 ÷ 4 = 6 tins

Calculate the cost of the tins before the discount.

6 x £12 = £72

Calculate the cost of the tins after the discount.

20% of £72 = £14.40

£72.00 - £14.40 = £57.60

State whether you have enough money to paint all of the wall sections.

Yes, because £57.60 is less than £70

£57.60 < £70

**Your functional skills exam**

Your functional skills exams will consist of 2 papers.   
These papers will take place over the following time periods:

* Non-calculator paper – 40 minutes
* Calculator – 1 hour 50 minutes

Further information on the format that your test will take can be obtained from your training provider.

**Hints and tips**

* Find out what format your exam will be in. It may be paper-based   
  or on-screen.
* Plan what you are going to revise in advance. Don’t leave it until the last minute.
* Do as many past papers as you can so you are prepared for the day. If possible, try to complete the past papers following the same format as the actual exam.
* Find a quiet place to study and revise. It helps to sit at a table or a desk, don’t revise in bed.
* Don’t stay up all night revising the night before your exam. It’s important to have a good rest so you feel refreshed and ready to go.
* Read the question 3 times. The first time to ensure you understand what is being asked, the second time to get an understanding of what you need to do, and a third time to figure out exactly what maths techniques you should be applying.
* If you are struggling with a question, skip it and come back to it later. Try not to sit getting worked up about a difficult question, it will only waste exam time. Move on and come back to it after you have answered the other questions.
* Take note of the number of marks available. This will give you an indication of how much working out you must show. For example, 1 mark will need an answer only and more marks will need you to show your working out.
* When you’ve finished the exam, go back and check your answers. If you still have time remaining, use it to check your answers and when you have checked your answers check them again.