

# Four <sup>عمل</sup>Operations Revision Worksheet

<sup>مکمل عدد</sup> Whole Numbers, <sup>اعشاریہ</sup> Decimals, and <sup>منفی</sup> Negative Numbers

## Section 1: <sup>جمع</sup>Addition and <sup>تفریق</sup>Subtraction

**Remember:** Line up the <sup>اعشاریہ نقطہ</sup>decimal points carefully. When working with <sup>منفی</sup>negatives, think about the <sup>علامت</sup>sign !

1.  $45 + 376 =$

4.  $-12 + 7 =$

2.  $328.5 + 19.47 =$

5.  $56.3 - 18.72 =$

3.  $7.63 + (-2.8) =$

6.  $-4 - (-9) =$

## Section 2: <sup>ضرب دینا</sup>Multiplication

**Remember:**

- Count the <sup>علامت</sup>signs: an <sup>جفت</sup>even number of <sup>منفی</sup>negatives gives a <sup>مثبت</sup>positive answer, an <sup>طاق</sup>odd number gives a <sup>منفی</sup>negative answer.
- We need to be careful when multiplying <sup>اعشاریہ</sup>decimals, and keep track of the <sup>اعشاریہ نقطہ</sup>decimal point, three methods are described below.

For the example <sup>ضرب دینا</sup>multiplication:  $3.4 \times 1.2$ , the three options are:

## 1. <sup>عامل</sup> Factoring Up to <sup>مکمل عدد</sup> Whole Numbers

We can make both numbers whole by multiplying by <sup>قوت</sup> powers of 10. These are 10, 100, 1 000, 10 000, ... etc.  
 Multiply 3.4 by 10 to make it 34. Multiply 1.2 by 10 to make it 12.  
 Now we have:

$$34 \times 12 = 408$$

But we multiplied the numbers by  $10 \times 10 = 100$ , so we divide the answer by 100:

$$\frac{408}{100} = 4.08$$

## 2. <sup>اعشاریہ مقام</sup> Counting Decimal Places

1. Multiply the numbers as if there are no <sup>اعشاریہ نقطہ</sup> decimal points.
2. Count how many <sup>اعشاریہ مقام</sup> decimal places there are in total in the question.
3. Put that many <sup>اعشاریہ مقام</sup> decimal places back into your answer.

**Example:**  $3.4 \times 1.2$

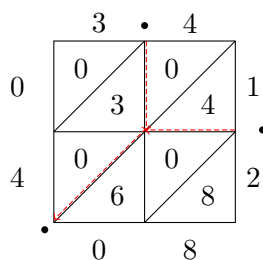
Ignore the <sup>اعشاریہ</sup> decimals:  $34 \times 12 = 408$

There is 1 <sup>اعشاریہ مقام</sup> decimal place in 3.4 and 1 in 1.2, so **2 in total**.

So the answer is 4.08

## 3. <sup>اعشاریہ</sup> Lattice Method with Decimal Alignment

You can use the lattice method to track the <sup>اعشاریہ نقطہ</sup> decimal points too.



اعشاريه نقطه

Find where the **decimal points** in each number meet, then follow the diagonal down to

اعشاريه نقطه

the left, that will be where the **decimal point** is in the answer.

In the example above we get 4.08, the same as before!

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Now try these questions:

1.  $24 \times 6 =$

5.  $3.4 \times 1.2 =$

9.  $-3 \times 4 =$

2.  $-2 \times -3 \times -2 =$

6.  $5.6 \times (-0.3) =$

10.  $0.0034 \times 68.7 =$

3.  $0.25 \times 0.4 =$

7.  $12.5 \times 0.08 =$

11.  $-4.2 \times 0.5 \times -0.5 =$

4.  $1.2 \times 0.06 =$

8.  $0.09 \times 0.7 =$

12.  $-0.6 \times -0.3 \times -2 =$

## Section 3: <sup>تقسیم</sup> Division

Remember:

- Use the bus stop method unless you can do it in your head.

- If the <sup>تقسیم کننده</sup> divisor is a <sup>اعشاریه</sup> decimal, you need to make it a <sup>مکمل عدد</sup> whole number (remember to apply the <sup>عامل</sup> factor to both numbers!):

$$66 \div 0.33 = 6600 \div 33 = 200$$

- Chunk larger <sup>تقسیم کننده</sup> divisors into smaller <sup>عامل</sup> factors if helpful.

$$176 \div 16 = (176 \div 4) \div 4 = 44 \div 4 = 11$$

### <sup>تقسیم</sup> Division Practice

1.  $84 \div 7 =$

5.  $-9 \div -3 =$

10.  $-12.6 \div 0.3 =$

2.  $156 \div 12 =$

6.  $8280 \div 24 =$

11.  $0.56 \div 0.08 =$

(Try chunking!)

7.  $3.6 \div 0.6 =$

12.  $6.4 \div (-0.2) =$

3.  $48 \div (-6) =$

8.  $0.84 \div 0.07 =$

13.  $-1.8 \div 0.3 =$

4.  $4.8 \div 0.4 =$

9.  $7.2 \div 0.6 =$

14.  $-0.45 \div 0.05 =$

## Section 4: Mixed Practice

Challenge yourself! Decide which methods to use.

1.  $12.5 + (-3.4) =$

2.  $-3 \times 4 \times -2 =$

3.  $24 \div (-6) + 5 \times 2 =$

7.  $7.25 - 3.68 =$

4.  $6.3 \div 0.3 =$

8.  $-8 \times (5 - 7) =$

5.  $(-2.4 \times 3.5) \div -0.7 =$

9.  $9.6 \div 1.2 + (-3) \times 2 =$

6.  $-15 + 28.4 \div 4 =$

10.  $-36 \div (-9) =$

## Extension Word Problems

1. The temperature was  $-3^{\circ}\text{C}$  and dropped by  $5^{\circ}\text{C}$  overnight. What is the new temperature?
2. A scuba diver descends 2.5 m per minute for 4 minutes, then ascends 3 m. What is the diver's final depth?
3. A submarine starts at sea level and travels vertically  $-4.2$  km, then another  $-3.8$  km. How far is it from the surface now? What is the submarine's <sup>ارتفاع</sup> **altitude**?  
<sup>تقسیم کننده</sup> **divisors** <sup>اعشاریه</sup> **decimal**
4. Some numbers produce <sup>تکراری اعشاریه</sup> **recurring decimals** when used as **divisors**. Find the **decimal** result of 1 divided by each of the first 7 <sup>مفرد عدد</sup> **prime numbers**. Some results <sup>ختم هونا</sup> **terminate** while others recur. Can you explain why?