

Grade 5 - Place Value and Powers of Ten - Answer Key

Common Core 5.NBT.A.1, 5.NBT.A.2 · maths-pdf.fr/en/

This answer key explains how the decimal point moves in each of the 20 problems. Multiplying by 10, 100 or 1,000 moves the point right 1, 2 or 3 places. Dividing moves it left. Count the zeros or read the exponent to know how many places to move.

Grade 5 · Common Core State Standards: **5.NBT.A.1, 5.NBT.A.2**

Exercise 1 - Tens and hundreds

The 7 in the thousands place is worth 7,000. The 7 in the hundreds place is worth 700.

$$7,000 \div 700 = 10.$$

Answer: **10 times**

Exercise 2 - One tenth

The 4 in the hundreds place is 400. The 4 in the tens place is 40.

$$40 \div 400 = \frac{1}{10}.$$

Answer: $\frac{1}{10}$

Exercise 3 - Compare digits in 3.33

The 3 in the ones place is worth 3. The 3 in the tenths place is worth 0.3.

$$3 \div 0.3 = 10.$$

Answer: **10 times**

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		3	3	3	3

3 is 10 times 0.3.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		3	3	3	3

3 is 10 times 0.3.

Exercise 4 - Multiply by 10

Multiplying by 10 moves the decimal point 1 place right.

(a) **37** (b) **4.6** (c) **520**

Exercise 5 - Divide by 10

Dividing by 10 moves the decimal point 1 place left.

(a) **45** (b) **6.3** (c) **0.8** (d) **0.25**

Exercise 6 - Multiply by 100

Multiplying by 100 moves the decimal point 2 places right.

(a) **600** (b) **38** (c) **450** (d) **7**

÷ 10 : 1 place left



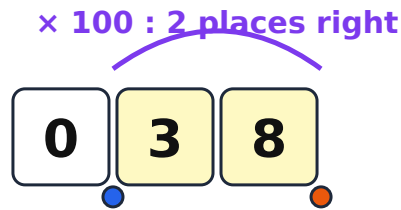
$$63 \div 10 = 6.3$$

One place left.

Exercise 7 - Divide by 100

Dividing by 100 moves the decimal point 2 places left.

(a) **72** (b) **5.3** (c) **0.09** (d) **0.465**



$$0.38 \times 100 = 38$$

Two places right.

Exercise 8 - Multiply by 1,000

Multiplying by 1,000 moves the decimal point 3 places right.

- (a) **900** (b) **3,250** (c) **12,000** (d) **4**

Exercise 9 - Write the exponent

Count the zeros. The number of zeros is the exponent.

- (a) 100 has 2 zeros: 10^2
(b) 10,000 has 4 zeros: 10^4
(c) 1,000,000 has 6 zeros: 10^6

Exercise 10 - Evaluate powers of 10

- (a) **10**
(b) $10 \times 10 \times 10 = 1,000$
(c) 5 zeros: **100,000**

Exercise 11 - Multiply by powers of 10

- (a) Move 2 places right: **420**
(b) Move 3 places right: **67**
(c) Move 4 places right: **350,000**

(d) Move 1 place right: **5**

$$\boxed{10} \times \boxed{10} \times \boxed{10} \times \boxed{10} \times \boxed{10} = 100,000$$

$$10^5 = 100,000.$$

Exercise 12 - Divide by powers of 10

(a) Move 2 places left: **8.4**

(b) Move 3 places left: **0.006**

(c) Move 1 place left: **2.53**

(d) Move 3 places left: **9**

$$\boxed{10} \times \boxed{10} \times \boxed{10} \times \boxed{10} \times \boxed{10} = 100,000$$

$$10^5 = 100,000.$$

Exercise 13 - Missing exponent

(a) 3.4 to 3,400 is 3 places right: **3**

(b) 0.056 to 56 is 3 places right: **3**

(c) 720 to 7.2 is 2 places left: **2**

(d) 15 to 0.015 is 3 places left: **3**

Exercise 14 - Missing number

(a) 8,500 is 85 moved 2 places: **85**

(b) 62 to 0.62 is 2 places left: **2**

(c) 4,200 is 4.2 moved 3 places: **4.2**

(d) 0.9 to 90 is 2 places right: **2**

Exercise 15 - Pencil boxes

$10^3 = 1,000$ pencils and $10^2 = 100$ pencils per box.

$$10^3 \div 10^2 = 1,000 \div 100 = 10.$$

The store filled **10 boxes**.

Exercise 16 - Line of ants

Multiply by 100: $0.3 \times 100 = 30$.

The line is **30 inches** long.

Exercise 17 - Weekly savings

10 weeks: $2.35 \times 10 = 23.5$, so \$23.50.

100 weeks: $2.35 \times 100 = 235$, so \$235.

Exercise 18 - Crayon cartons

Boxes: $6,000 \div 100 = 60$.

Cartons: $60 \div 10 = 6$.

Answer: **60 boxes and 6 cartons**

Exercise 19 - Mei's product

Mei added zeros but did not move the decimal point. Multiplying by 100 moves the point 2 places right.

$$0.35 \times 100 = 35.$$

Correct product: **35**

Exercise 20 - Bake sale quarters

Total: $0.25 \times 10^2 = 0.25 \times 100 = 25$, so \$25.

One tenth: $25 \div 10 = 2.5$.

Diego gives \$2.50 to the shelter.