

Name _____

Date _____

4.2 Adding and subtracting decimals — worked answers

Add and subtract decimals, mentally and with a written method. · 56 questions

A · Fluency — Add and subtract decimals.

- 1 Work out $2.3 + 7.8$

Answer: 10.1

Line up the decimal points and add place by place: $2.3 + 7.8 = 10.1$.

- 2 Work out $6.9 + 12.4$

Answer: 19.3

Line up the decimal points and add place by place: $6.9 + 12.4 = 19.3$.

- 3 Work out $4.5 + 3.7$

Answer: 8.2

Line up the decimal points and add place by place: $4.5 + 3.7 = 8.2$.

- 4 Work out $0.8 + 0.35$

Answer: 1.15

Line up the decimal points and add place by place: $0.8 + 0.35 = 1.15$.

- 5 Work out $15.6 + 2.45$

Answer: 18.05

Line up the decimal points and add place by place: $15.6 + 2.45 = 18.05$.

- 6 Work out $9.07 + 1.9$

Answer: 10.97

Line up the decimal points and add place by place: $9.07 + 1.9 = 10.97$.

- 7 Work out $3.25 + 4.75$

Answer: 8

Line up the decimal points and add place by place: $3.25 + 4.75 = 8$.

- 8 Work out $12.8 + 0.62$

Answer: 13.42

Line up the decimal points and add place by place: $12.8 + 0.62 = 13.42$.

- 9 Work out $0.9 + 0.9$

Answer: 1.8

Line up the decimal points and add place by place: $0.9 + 0.9 = 1.8$.

- 10 Work out $23.15 + 6.85$

Answer: 30

Line up the decimal points and add place by place: $23.15 + 6.85 = 30$.

- 11** Work out $5.4 + 11.06$

Answer: 16.46

Line up the decimal points and add place by place: $5.4 + 11.06 = 16.46$.

- 12** Work out $7.75 + 2.5$

Answer: 10.25

Line up the decimal points and add place by place: $7.75 + 2.5 = 10.25$.

- 13** Work out $13.3 - 5.8$

Answer: 7.5

Fill the gaps with zeros so the columns line up, then subtract: $13.3 - 5.8 = 7.5$.

- 14** Work out $10 - 4.83$

Answer: 5.17

Fill the gaps with zeros so the columns line up, then subtract: $10 - 4.83 = 5.17$.

- 15** Work out $20 - 12.83$

Answer: 7.17

Fill the gaps with zeros so the columns line up, then subtract: $20 - 12.83 = 7.17$.

- 16** Work out $30 - 4.55$

Answer: 25.45

Fill the gaps with zeros so the columns line up, then subtract: $30 - 4.55 = 25.45$.

- 17** Work out $40 - 16.782$

Answer: 23.218

Fill the gaps with zeros so the columns line up, then subtract: $40 - 16.782 = 23.218$.

- 18** Work out $10 - 6.42$

Answer: 3.58

Fill the gaps with zeros so the columns line up, then subtract: $10 - 6.42 = 3.58$.

- 19** Work out $8.4 - 2.65$

Answer: 5.75

Fill the gaps with zeros so the columns line up, then subtract: $8.4 - 2.65 = 5.75$.

- 20** Work out $15.2 - 9.75$

Answer: 5.45

Fill the gaps with zeros so the columns line up, then subtract: $15.2 - 9.75 = 5.45$.

- 21** Work out $7 - 0.35$

Answer: 6.65

Fill the gaps with zeros so the columns line up, then subtract: $7 - 0.35 = 6.65$.

- 22** Work out $6.05 - 2.9$

Answer: 3.15

Fill the gaps with zeros so the columns line up, then subtract: $6.05 - 2.9 = 3.15$.

- 23** Work out $12.5 - 3.75$

Answer: 8.75

Fill the gaps with zeros so the columns line up, then subtract: $12.5 - 3.75 = 8.75$.

- 24 Work out $9.1 - 8.09$

Answer: 1.01

Fill the gaps with zeros so the columns line up, then subtract: $9.1 - 8.09 = 1.01$.

B · Reasoning — Mental methods and missing numbers.

- 25 Work out $2.3 + 7.8$ by splitting into whole numbers and decimal parts. What is the answer?

Answer: 10.1

Whole numbers: $2 + 7 = 9$. Decimal parts: $0.3 + 0.8 = 1.1$. Total $9 + 1.1 = 10.1$.

- 26 Work out $6.9 + 12.4$ by rounding 6.9 up to 7 and adjusting. What is the answer?

Answer: 19.3

$7 + 12.4 = 19.4$, then subtract the extra 0.1: 19.3.

- 27 Work out $13.3 - 5.8$ by rounding 5.8 up to 6 and adjusting.

Answer: 7.5

$13.3 - 6 = 7.3$, then add back the extra 0.2: 7.5.

- 28 When you add decimals in columns, what must you line up?

- ☐ The last digits
- ☐ The first digits
- ☐ The decimal points
- ☐ The longest numbers

Answer: The decimal points

Lining up the points lines up the place values, which is what matters.

- 29 Arun works out $10 - 4.83$ by writing 10 as 10.00. Why?

- ☐ To make it look longer
- ☐ So the columns line up and he can borrow
- ☐ Because 10 is not a decimal
- ☐ It makes no difference

Answer: So the columns line up and he can borrow

$10.00 - 4.83 = 5.17$. Writing the zeros makes the subtraction possible.

- 30 Marcus works out $10 - 4.83$ as $10 - 4 = 6$, then $6 - 0.8 = 5.2$, then $5.2 - 0.03$. What is his final answer?

Answer: 5.17

$5.2 - 0.03 = 5.17$ — the same as the column method.

- 31 Work out $0.8 + 0.35$.

Answer: 1.15

Write 0.8 as 0.80, then $0.80 + 0.35 = 1.15$.

- 32 Work out $7 - 0.35$.

Answer: 6.65

Write 7 as 7.00, then $7.00 - 0.35 = 6.65$.

- 33 Is $0.3 + 0.8$ equal to 0.11?

- ☐ Yes
- ☐ No

Answer: No

$0.3 + 0.8 = 1.1$. Adding tenths can carry into the units — 11 tenths is 1.1.

- 34 Is $4.5 + 3.7$ equal to 8.2?

☐ Yes
☐ No

Answer: Yes

Whole numbers $4 + 3 = 7$, decimals $0.5 + 0.7 = 1.2$, total 8.2.

- 35 Find the missing number: $3.4 + ? = 9.1$

Answer: 5.7

Subtract to find it: $9.1 - 3.4 = 5.7$.

- 36 Find the missing number: $? - 2.6 = 4.85$

Answer: 7.45

Add to find it: $4.85 + 2.6 = 7.45$.

C · Challenge — Several steps and brackets.

- 37 Work out $4.75 + 3.6 - 2.85$.

Answer: 5.5

$4.75 + 3.6 = 8.35$, then $8.35 - 2.85 = 5.5$.

- 38 Work out $20 - (6.4 + 3.85)$.

Answer: 9.75

Brackets first: $6.4 + 3.85 = 10.25$. Then $20 - 10.25 = 9.75$.

- 39 Work out $40 - 16.782$.

Answer: 23.218

Write 40 as 40.000, then subtract: 23.218.

- 40 Three lengths are 1.8 m, 3.5 m and 2.45 m. What is the total, in metres?

Answer: 7.75

$1.8 + 3.5 = 5.3$, and $5.3 + 2.45 = 7.75$ m.

- 41 Four pipes measure 1.8 m, 3.5 m, 2.45 m and 0.85 m. Jed needs 10 m in total. How much more pipe must he buy, in metres?

Answer: 1.4

The four pipes total 8.6 m, so he needs $10 - 8.6 = 1.4$ m more.

- 42 Work out $0.1 + 0.2 + 0.3 + 0.4$.

Answer: 1

The tenths add to 10 tenths, which is 1.

- 43 A number increased by 3.75 gives 10.2. What is the number?

Answer: 6.45

$10.2 - 3.75 = 6.45$.

- 44 Work out $12.5 - 3.75 - 1.25$.

Answer: 7.5

$12.5 - 3.75 = 8.75$, then $8.75 - 1.25 = 7.5$.

D · Word problems — Money, lengths and masses.

- 45** At the cinema Priya spends \$4.75 on a ticket, \$1.75 on sweets and \$0.85 on a drink. How much does she spend in total, in dollars?

Answer: 7.35

$$4.75 + 1.75 = 6.50, \text{ plus } 0.85 = \$7.35.$$

- 46** Priya pays with a \$10 note. How much change does she receive, in dollars?

Answer: 2.65

$$10 - 7.35 = \$2.65.$$

- 47** Jed has four lengths of pipe: 1.8 m, 3.5 m, 2.45 m and 0.85 m. What is the total length, in metres?

Answer: 8.6

$$1.8 + 3.5 + 2.45 + 0.85 = 8.6 \text{ m.}$$

- 48** A bottle holds 1.5 litres. 0.65 litres are poured out. How much is left, in litres?

Answer: 0.85

$$1.5 - 0.65 = 0.85 \text{ litres.}$$

- 49** A parcel weighs 2.35 kg and another weighs 1.8 kg. What is the total mass, in kg?

Answer: 4.15

$$2.35 + 1.8 = 4.15 \text{ kg.}$$

- 50** A runner's two laps take 62.4 s and 58.75 s. What is the total time, in seconds?

Answer: 121.15

$$62.4 + 58.75 = 121.15 \text{ s.}$$

- 51** A shop bill is \$23.40. You pay with \$50. How much change, in dollars?

Answer: 26.6

$$50 - 23.40 = \$26.60.$$

- 52** A plank 2.4 m long has 0.85 m cut off. How much is left, in metres?

Answer: 1.55

$$2.4 - 0.85 = 1.55 \text{ m.}$$

- 53** The temperature rises from 18.6 °C to 24.35 °C. By how many degrees did it rise?

Answer: 5.75

$$24.35 - 18.6 = 5.75 \text{ °C.}$$

- 54** A tank holds 30 litres. 4.55 litres are used. How much remains, in litres?

Answer: 25.45

$$30 - 4.55 = 25.45 \text{ litres.}$$

- 55** Three books cost \$8.99, \$12.50 and \$6.75. What is the total, in dollars?

Answer: 28.24

$$8.99 + 12.50 + 6.75 = \$28.24.$$

- 56** A journey of 12.8 km is followed by one of 7.45 km. How far in total, in km?

Answer: 20.25

$$12.8 + 7.45 = 20.25 \text{ km.}$$