

PERCENTAGE AND RATIOS

Key percentage facts:

- $50\% = 0.5 = \frac{1}{2}$
- $25\% = 0.25 = \frac{1}{4}$ $75\% = 0.75 = \frac{3}{4}$
- $10\% = 0.1 = \frac{1}{10}$
- $1\% = 0.01 = \frac{1}{100}$

- *Here are the 3 simple steps for finding a percentage of a number:*
 - **Step 1**
 - - **Convert the percentage to a decimal by dividing it by 100.**
 - **Step 2**
 - - **Multiply this decimal by the number you are finding the percentage of.**
 - **Step 3**
 - - **Check your units of measurement.**
- *You should have now found your percentage of a number!*
- **Example 1) Find 27% of \$50.**
 - *Step 1)*
 - We convert the percentage to a decimal by dividing by 100.
 - $27 \div 100 = 0.27$
 - *Step 2)*
 - We need to multiply decimal by the number we are finding the percentage of.
 - $0.27 \times 50 = 13.5$
 - *Step 3)*
 - We need to convert this amount to dollars. So $13.5 = \$13.50$
 - **Answer: \$13.50**

Name

Date



FIND SIMPLE PERCENTAGES SHEET 2

Find these percentages of numbers.

A) 50% and 100%

- | | | |
|------------------|-------------------|------------------|
| 1) 50% of 28 = | 2) 100% of 326 = | 3) 50% of 76 = |
| 4) 100% of 78 = | 5) 50% of 126 = | 6) 100% of 3.6 = |
| 7) 50% of 13 = | 8) 50% of 460 = | 9) 100% of 417 = |
| 10) 50% of 134 = | 11) 100% of 1.8 = | 12) 50% of 580 = |

B) 1% and 10%

- | | | |
|----------------|-----------------|-----------------|
| 1) 10% of 37 = | 2) 1% of 625 = | 3) 10% of 83 = |
| 4) 1% of 86 = | 5) 10% of 327 = | 6) 1% of 180 = |
| 7) 1% of 835 = | 8) 10% of 690 = | 9) 10% of 6 = |
| 10) 1% of 38 = | 11) 10% of 42 = | 12) 1% of 429 = |

C) 1%, 10%, 50% and 100%

- | | | |
|------------------|------------------|------------------|
| 1) 50% of 34 = | 2) 100% of 6.4 = | 3) 10% of 62 = |
| 4) 1% of 321 = | 5) 10% of 585 = | 6) 50% of 8.6 = |
| 7) 50% of 158 = | 8) 1% of 609 = | 9) 50% of 624 = |
| 10) 100% of 57 = | 11) 50% of 19 = | 12) 1% of 530 = |
| 13) 50% of 630 = | 14) 1% of 483 = | 15) 10% of 371 = |

Name _____

Date _____



FINDING PERCENTAGES SHEET 2

Find these percentages of numbers.

A) Multiples of 1%

- | | | |
|-----------------|------------------|-----------------|
| 1) 3% of 400 = | 2) 2% of 60 = | 3) 5% of 200 = |
| 4) 1% of 270 = | 5) 7% of 500 = | 6) 4% of 1200 = |
| 7) 2% of 330 = | 8) 8% of 300 = | 9) 6% of 2000 = |
| 10) 9% of 700 = | 11) 3% of 6000 = | 12) 1% of 70 = |

B) Multiples of 10%

- | | | |
|------------------|------------------|-----------------|
| 1) 20% of 80 = | 2) 50% of 130 = | 3) 70% of 50 = |
| 4) 30% of 12 = | 5) 60% of 80 = | 6) 40% of 120 = |
| 7) 80% of 400 = | 8) 10% of 7 = | 9) 90% of 80 = |
| 10) 50% of 320 = | 11) 30% of 600 = | 12) 70% of 11 = |

C) Mixed

- | | | |
|------------------|------------------|-----------------|
| 1) 40% of 200 = | 2) 3% of 50 = | 3) 20% of 140 = |
| 4) 60% of 3 = | 5) 30% of 80 = | 6) 7% of 800 = |
| 7) 4% of 150 = | 8) 90% of 20 = | 9) 50% of 36 = |
| 10) 30% of 800 = | 11) 6% of 20 = | 12) 3% of 220 = |
| 13) 70% of 60 = | 14) 40% of 210 = | 15) 5% of 500 = |

This horse in real life is 1500 mm high and 2000 mm long, so the ratio of its **height to length** is

$$1500 : 2000$$

What is that ratio when we draw it at 1/10th normal size?

$$\begin{aligned} 1500 : 2000 &= 1500 \times 1/10 : 2000 \times 1/10 \\ &= \mathbf{150 : 200} \end{aligned}$$

Name _____

Date _____



RATIO PROBLEMS 2 - Simplifying Ratios

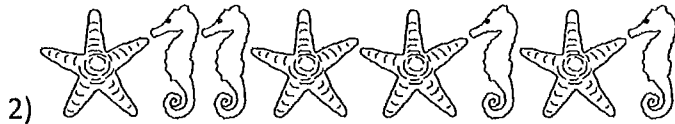
We can write a ratio in its simplest form by dividing both sides of the ratio by the same number.

Example: to get the ratio 4:10 in its simplest form we can divide both sides by 2 to give us 2:5. We cannot divide this ratio any further so it is in its simplest form.



What is the ratio of butterflies to snails? ___ : ___

What is this ratio in its simplest form? ___ : ___



What is the ratio of starfish to seahorses? ___ : ___

Write this ratio in its simplest form ___ : ___



What is the ratio of apples to pears? ___ : ___

What is this ratio in its simplest form? ___ : ___

4) In a zoo, there are 3 tigers and 6 lions.

Write down the ratio of lions to tigers ___ : ___

What is this ratio in its simplest form? ___ : ___



Equivalent Ratios (A)

Determine the value of each unknown.

1. $80 : s = 10 : 7$

2. $10 : 30 = 1 : p$

3. $v : 33 = 7 : 11$

4. $3 : 2 = x : 4$

5. $q : 9 = 40 : 90$

6. $8 : h = 80 : 70$

7. $20 : 25 = t : 5$

8. $m : 24 = 7 : 3$

9. $1 : k = 6 : 72$

10. $5 : 8 = 30 : d$

11. $7 : 2 = 35 : g$

12. $108 : 99 = n : 11$

13. $j : 10 = 30 : 100$

14. $8 : 72 = 1 : y$

15. $63 : 36 = c : 4$

16. $18 : 4 = 9 : r$

17. $w : 8 = 12 : 32$

18. $2 : 1 = 6 : b$

19. $10 : 50 = a : 5$

20. $9 : 7 = f : 35$