Name _____ Date _____ Period _____

LESSON 4-1 · HOMEWORK PACKET · SHEET 1 OF 2

Percent Means Per Hundred

Maryland Standard 6.RP.A.3c · Learning target – I can write a ratio as a percent by finding the equivalent ratio out of 100.

REMEMBER

- **Percent** means "per hundred." 37% = 37 out of 100.
- On a hundred grid, each square is **1%**.
- Make an **equivalent ratio** out of 100: multiply **both** terms by the same number.

WORKED EXAMPLE

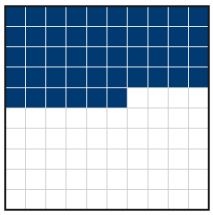
Out of every 20 students, 7 ride the bus. What percent of the students ride the bus?

Step 1 20 × 5 = 100, so multiply both terms by 5.
Step 2 7 × 5 = 35, so 7 out of 20 = 35 out of 100.
Step 3 35 out of 100 = 35%.
Answer **35%**

PRACTICE

show your work · label units

1. The grid has 100 equal squares.



a. What percent of the grid is shaded? _____ %

b. What percent is **not** shaded? _____ %

2. Write each ratio as a percent. First scale it to an equivalent ratio out of 100.

a. 3 out of 10 = _____ %

b. 7 out of 25 = _____ %

c. 1 out of 2 = _____ %

d. 17 out of 50 = _____ %

e. 2 out of 5 = _____ %

f. 3 out of 20 = _____ %

g. 13 out of 25 = _____ %

h. 9 out of 10 = _____ %

3. **Animal Shelter.** Out of every 25 dogs at a shelter, 9 are puppies. Complete the ratio table. Then write the percent of dogs that are puppies.

Puppies	9	18		
All dogs	25	50	75	100

Percent of puppies _____ %

4. **Garden Plants.** A garden has 50 plants. 22 of them are tomato plants.

a. What percent are tomato plants? _____ %

b. What percent are **not** tomato plants? _____ %

5. **Find the Error.** To write 7 out of 20 as a percent, Ana added 80 to both numbers. She got 87 out of 100, so she wrote 87%. Explain her mistake and find the correct percent.

_____

_____

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Find a percent on a label, sign, or screen at home. Tell someone what it means "out of 100."

Name _____ Date _____ Period _____

LESSON 4-1 · HOMEWORK PACKET · SHEET 2 OF 2

Percents Greater Than 100%

Maryland Standard 6.RP.A.3c · Learning target – I can use percents greater than 100% to describe an amount larger than the whole.

REMEMBER

- **100%** is one whole. Over 100% is **more than the whole**.
- 200% = 2 times the whole. 150% = 1.5 times.
- "Times as much" to percent: multiply by 100. 2.5 times = 250%.

WORKED EXAMPLE

A puppy grew from 10 lb to 13 lb. Write 13 lb as a percent of 10 lb (the whole).

Step 1 Scale by 10: 13 to 10 = 130 to 100.

Step 2 130 out of 100 = 130%, more than the whole.

Answer **130%**

PRACTICE

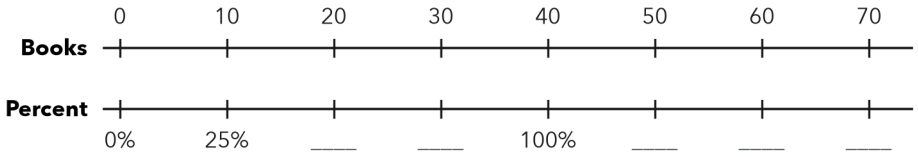
show your work · label units

1. Write each amount as a percent of the whole.

a. 3 times as much = ____ %

b. 1.75 times as much = ____ %

2. **Library Books.** Monday (40 books) is the whole. Tuesday: 70 books. Fill in the double number line. Write Tuesday as a percent of Monday.



Tuesday _____ %

3. **Bake Sale.** A class set a goal of $200. They raised $260. What percent of the goal did they raise?

Answer _____ %

4. **Chess Club.** Last year a chess club had 20 members (the whole). This year it has 33 members. Write this year's members as a percent of last year's.

Answer _____ %

5. **Find the Error.** Malik says 60 cm is 60% of 30 cm. Explain his mistake and fix it.

_____

_____

TEST PRACTICE

choose the best answer

6. 45 points is what percent of 30 points?

A 15% **B** 45% **C** 115% **D** 150%

7. 250% of an amount is how many times the amount?

A 0.25 times **B** 2.5 times **C** 25 times **D** 250 times

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Tell someone at home what 200% of their age would be.

Name _____ Date _____ Period _____

LESSON 4-2 · HOMEWORK PACKET · SHEET 1 OF 2

Fractions, Decimals, Percents

Maryland Standard 6.RP.A.3c · Learning target – I can write the same value as a fraction, a decimal, and a percent.

REMEMBER

- A percent is a fraction out of 100: 45% = 45/100 = 0.45.
- **Fraction to percent:** make the denominator 100.
- **Decimal to percent:** read hundredths. 0.07 = 7%, 0.4 = 40%.

WORKED EXAMPLE

Write 3/20 as a decimal and as a percent.

Step 1 20 × 5 = 100, so 3/20 = 15/100.

Step 2 15 hundredths = 0.15.

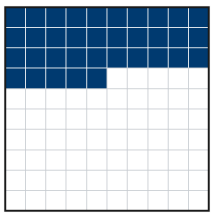
Step 3 15/100 = 15%.

Answer **3/20 = 0.15 = 15%**

PRACTICE

show your work · label units

1. Write the shaded part of the grid three ways.



a. Fraction (simplest form) _____

b. Decimal _____

c. Percent _____ %

2. Complete the table. Write fractions in simplest form.

Fraction	Decimal	Percent
1/4		
	0.7	
		8%
		65%
3/5		

3. **Soccer Practice.** Amara scored on 11 of her 25 shots. Write this as a fraction, a decimal, and a percent.

Show your work.

Fraction, decimal, percent _____

4. **Find the Error.** Destiny wrote 3/4 = 0.34 = 34%. Explain her mistake. Write 3/4 correctly.

_____

_____

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Find a fraction, a decimal, or a percent at home (a recipe, a price tag, a battery icon). Write it the other two ways.

Name _____ Date _____ Period _____

LESSON 4-2 · HOMEWORK PACKET · SHEET 2 OF 2

Compare and Order

Maryland Standard 6.RP.A.3c · Learning target – I can compare and order values written as fractions, decimals, and percents.

REMEMBER

- Write every value in the **same form** (all percents).
- Hundredths are the bridge: 0.4 = 0.40 = 40%.
- Benchmarks: 1/4 = 25%, 1/2 = 50%, 3/4 = 75%.

WORKED EXAMPLE

Order from least to greatest: 0.3, 7/20, 32%.

Step 1 0.3 = 0.30 = 30%

Step 2 7/20 = 35/100 = 35%

Step 3 Compare: 30% < 32% < 35%

Answer **0.3, 32%, 7/20**

PRACTICE

show your work · label units

1. Write <, >, or = in each blank.

a. 0.6 ___ 58% **b.** 3/4 ___ 0.8 **c.** 0.09 ___ 1/10

2. Order each set from least to greatest.

a. 0.72, 7/10, 75% _____ **b.** 1/4, 0.2, 22% _____ **c.** 1.3, 125%, 6/5 _____

3. **Field Trip Vote.** Room A: 0.55 of students chose the aquarium. Room B: 3/5 chose it. Room C: 52% chose it. Order the rooms from least to greatest share.

Show your work.

Order _____

4. **Stretch.** Write one value that is between 3/5 and 0.7. Write it as a fraction, a decimal, and a percent.

Fraction, decimal, percent _____

5. **Find the Error.** Nico says 3/8 is greater than 0.4 because 8 is greater than 4. Explain his mistake and compare the values correctly.

_____

_____

TEST PRACTICE

choose the best answer

6. Which list is ordered from least to greatest?

A 2/5, 0.35, 38% **B** 0.35, 2/5, 38% **C** 0.35, 38%, 2/5 **D** 38%, 0.35, 2/5

7. Which value is the greatest?

A 0.62 **B** 3/5 **C** 64% **D** 0.6

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Ask someone at home which is more: 3/4 of a pizza or 70% of the same pizza. Show them how you know.

Name _____ Date _____ Period _____

LESSON 4-3 · HOMEWORK PACKET · SHEET 1 OF 2

Estimate with Benchmarks

Maryland Standard 6.RP.A.3c · Learning target – I can estimate a percent by comparing an amount to benchmark percents.

REMEMBER

- **Benchmarks:** 10%, 25%, 50%, 75%, 100%.
- Find benchmark amounts of the **whole**. Which one is the part **about** equal to?
- A **double number line** lines up amounts with percents.

WORKED EXAMPLE

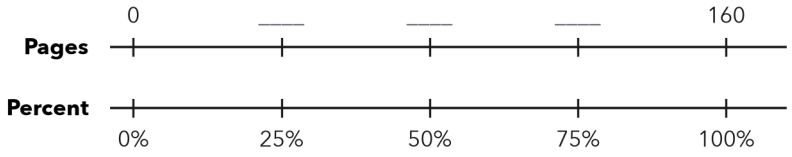
A water jug holds 40 cups. There are 29 cups left. About what percent of the jug is left?

Step 1 Benchmarks of 40: 50% = 20 and 75% = 30.
Step 2 29 is very close to 30.
Step 3 So 29 out of 40 is about 75%.
Answer **about 75%**

PRACTICE

show your work · label units

1. **Reading Goal.** Jada's goal is to read 160 pages. She has read 42 pages. Fill in the double number line. Then estimate the percent of her goal she has read.



About _____ %

2. About what percent? Name the closest benchmark: 10%, 25%, 50%, 75%, or 100%.

a. 7 out of 60 ≈ ___ %
b. 38 out of 50 ≈ ___ %
c. 23 out of 90 ≈ ___ %
d. 19 out of 40 ≈ ___ %
e. 49 out of 50 ≈ ___ %
f. 11 out of 45 ≈ ___ %
g. 16 out of 150 ≈ ___ %
h. 61 out of 80 ≈ ___ %

3. **Class Fundraiser.** A class wants to raise $500. So far they have raised $96. Use 10% of the goal to estimate the percent they have raised.

a. 10% of $500 = _____
b. About what percent have they raised? _____ %

4. **Bus Seats.** A bus has 48 seats. 35 seats are filled. About what percent of the seats are filled? Name the benchmark you used.

About _____ %

5. **Compare.** Which is closer to 50%: 26 out of 50, or 26 out of 60? Explain how you know.

_____

_____

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #___

AT HOME Look at a battery icon or a gas gauge. Estimate the percent it shows and explain your benchmark to someone at home.

Name _____ Date _____ Period _____

LESSON 4-3 · HOMEWORK PACKET · SHEET 2 OF 2

Estimate a Percent of a Number

Maryland Standard 6.RP.A.3c · Learning target – I can estimate a percent of a number using friendly percents and rounded amounts.

REMEMBER

- Round to **friendly numbers** first.
- 10%: divide by 10. 5% = half of 10%.
- 25% = 1/4, 50% = 1/2, 75% = 3/4.

WORKED EXAMPLE

Estimate 24% of 83.

Step 1 Round: 25% of 80.

Step 2 25% = 1/4, and 80 ÷ 4 = 20.

Answer about 20

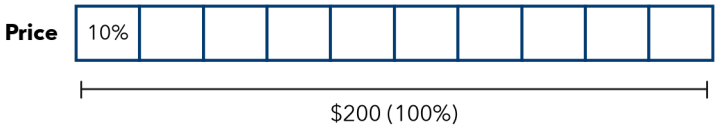
PRACTICE

show your work · label units

1. Estimate. Round to friendly numbers first.

a. 11% of 59 ≈ ___ **b.** 74% of 41 ≈ ___ **c.** 26% of 203 ≈ ___

2. Sneaker Sale. Sneakers cost $198 and are 30% off. Round to $200. Each part of the tape is 10% of $200.



a. About how many dollars is one part (10%)? _____

b. About how much is the discount (30%)? _____

3. School Lunch. About 48% of 412 students buy lunch. About how many students is that?

About _____ students

4. Apple Orchard. A farm picked 798 apples. About 24% of them were too small to sell. About how many apples were too small?

About _____ apples

5. Find the Error. Mia estimated 19% of 512 by writing 20 × 500 = 10,000. Explain her mistake. Give a good estimate.

_____

_____

TEST PRACTICE

choose the best answer

6. Which is the best estimate of 26% of 79?

A 2 **B** 20 **C** 26 **D** 40

7. A coat costs $119. It is 40% off. Which is the best estimate of the discount?

A $4.80 **B** $40 **C** $48 **D** $72

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Find a sale sign. Estimate the discount out loud with someone at home.

Name _____ Date _____ Period _____

LESSON 4-4 · HOMEWORK PACKET · SHEET 1 OF 2

Find the Percent of a Number

Maryland Standard 6.RP.A.3c · Learning target – I can find the percent of a number exactly.

REMEMBER

- The **whole** comes after "of." In 30% of 80, the whole is 80.
- Percent to decimal, then multiply: 0.3 × 80 = 24.
- Or use 10%: 10% of 80 = 8, so 30% = 3 × 8 = 24.

WORKED EXAMPLE

Find 35% of 60.

Step 1 Write 35% as a decimal: 0.35.

Step 2 Multiply: 0.35 × 60 = 21.

Step 3 Check with 10%: 6 + 6 + 6 + 3 = 21.

Answer 21

PRACTICE

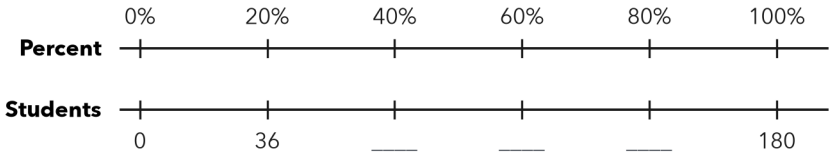
show your work · label units

1. Find each part.

a. 20% of 45 = _____ **b.** 75% of 64 = _____ **c.** 6% of 350 = _____

d. 45% of 80 = _____ **e.** 150% of 30 = _____ **f.** 12% of 250 = _____

2. **Lunch from Home.** A grade has 180 students. 40% of them bring lunch from home. Fill in the double number line. Then find how many students bring lunch.



Answer _____ students

3. **Jacket Sale.** A jacket costs $64. It is on sale for 25% off. How much money is taken off? What is the sale price?

a. Discount: _____

b. Sale price: _____

Show your work.

4. **Soccer Team.** A soccer team has 40 players. 15% of the players are new this year. How many players are new?

Answer _____ players

5. **Compare.** Which is greater: 30% of 90, or 90% of 30? Show both amounts. Explain what you notice.

_____

_____

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Find a sale sign or a tip suggestion. Work out the exact amount with someone at home.

Name _____ Date _____ Period _____

LESSON 4-4 · HOMEWORK PACKET · SHEET 2 OF 2

Compare Percents

Maryland Standard 6.RP.A.3c · Learning target – I can compare two records fairly by converting each one to a percent.

REMEMBER

- Compare records fairly: write each as a **percent**.
- Scale to out of 100, or divide part ÷ whole.
- More hits is **not** always a better rate.

WORKED EXAMPLE

Mia made 14 of 20 shots. Leo made 18 of 25. Who has the better rate?

Step 1 Mia: 14/20 = 70/100 = 70%. Leo: 18/25 = 72/100 = 72%.

Step 2 Compare: 72% > 70%.

Answer **Leo has the better rate.**

PRACTICE

show your work · label units

1. Write each record as a percent.

a. 21 out of 30 = ___ % **b.** 13 out of 20 = ___ % **c.** 9 out of 12 = ___ %

2. **Softball Hits.** Complete the table. Circle the player with the best record.

Player	Hits	At bats	Percent
Ava	9	20	
Ben	12	25	
Cruz	22	50	

3. **Spelling Tests.** Rosa spelled 34 of 40 words correctly. Kai spelled 42 of 50 words correctly. Write each as a percent. Who did better?

Percents and who did better _____

4. Select **all** the records that are greater than 70%.

☐ **A** 15 out of 20 ☐ **B** 17 out of 25 ☐ **C** 36 out of 50 ☐ **D** 7 out of 10

5. **Find the Error.** Deja says 18 out of 24 = 24 out of 30. Is she right? Explain.

_____

_____

TEST PRACTICE

choose the best answer

6. Which record has the greatest percent?

A 13 out of 20 **B** 16 out of 25 **C** 33 out of 50 **D** 6 out of 10

7. Team A won 12 of 16 games. Team B won 15 of 25 games. Which is true?

A B did better. It won more games. **B** A won 75%, B won 60%. A did better.

C Both teams did equally well. **D** A won 12%, B won 15%.

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Compare two game records at home by changing both to percents.

Name _____ Date _____ Period _____

LESSON 4-5 · HOMEWORK PACKET · SHEET 1 OF 2

Find the Whole

Maryland Standard 6.RP.A.3c · Learning target – I can find the whole when I know a part and the percent it represents.

REMEMBER

- The **part** is what you know. The **whole** is 100%.
- Step **down** to a friendly percent, then build **up** to 100%.
- Percent below 100%? The whole is **greater** than the part.

WORKED EXAMPLE

24 is 40% of what number?

Step 1 40% is 24, so 10% is 24 ÷ 4 = 6.

Step 2 100% is 10 × 6 = 60.

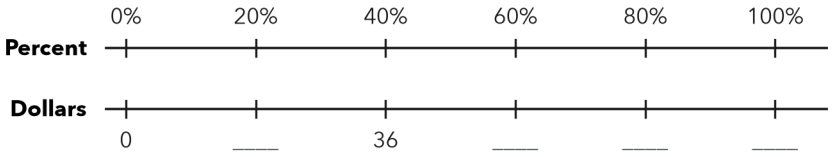
Step 3 Check: 0.4 × 60 = 24, so it checks.

Answer 60

PRACTICE

show your work · label units

1. Bike Helmet. Andre has saved $36. That is 40% of the cost of a bike helmet. Fill in the double number line. Then find the cost of the helmet.



Cost _____ dollars

2. Find each whole.

a. 13 is 10% of _____

b. 11 is 25% of _____

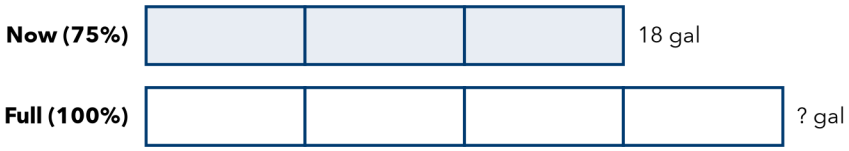
c. 21 is 30% of _____

d. 32 is 40% of _____

e. 7 is 5% of _____

f. 54 is 60% of _____

3. Water Tank. A water tank is 75% full. It holds 18 gallons now. Each part of the tape diagram is 25% of the full tank. How many gallons does the tank hold when it is full?



Answer _____ gallons

4. Chapter Book. Lena has read 120 pages. That is 75% of her book. How many pages long is it?

Answer _____ pages

5. Reason. 20 is 40% of number A. 20 is also 80% of number B. Without solving, which number is greater, A or B? Explain. Then find both numbers.

_____

_____

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Tell someone at home: if 10 is 50% of a number, what is the number? Explain how you know.

Name _____ Date _____ Period _____

LESSON 4-5 · HOMEWORK PACKET · SHEET 2 OF 2

Solve for the Whole

Maryland Standard 6.RP.A.3c · Learning target – I can write and solve an equation to find the whole from a part and a percent.

REMEMBER

- Write **part = percent × whole**, with *w* for the whole.
- Solve by dividing: *w* = part ÷ decimal.
- **Check:** decimal × whole should give the part.

WORKED EXAMPLE

$18 is 60% of a shirt's first price. Find the first price.

Step 1 Write the equation: 0.6 × *w* = 18

Step 2 Divide: *w* = 18 ÷ 0.6 = 180 ÷ 6 = 30

Step 3 Check: 0.6 × 30 = 18, so it checks.

Answer **$30**

PRACTICE

show your work · label units

1. Solve each equation for *w*.

a. 0.2 × *w* = 14 ____ **b.** 0.25 × *w* = 12 ____ **c.** 0.8 × *w* = 64 ____

2. 33 is 55% of what number? Write an equation and solve it.

a. Equation: _____

b. *w* = _____

3. **Field Trip.** A class has collected $315 for a trip. That is 75% of the total cost. Find the total cost. How much more does the class need?

Show your work.

Total and still needed _____

4. **Savings Goal.** Tasha has saved $42. That is 35% of her goal. Write an equation and find her goal.

Equation and goal _____

5. **Find the Error.** Jamal solved "28 is 35% of *w*" as *w* = 28 ÷ 35 = 0.8. Explain his mistake. Solve and check.

_____

_____

TEST PRACTICE

choose the best answer

6. 45 is 30% of a number *w*. Which equation can you use to find *w*?

A 0.3 × 45 = *w* **B** 0.3 × *w* = 45 **C** 45 × *w* = 30 **D** *w* ÷ 45 = 0.3

7. A team won 18 games. That is 60% of its games. How many games did it play?

A 10.8 **B** 24 **C** 30 **D** 78

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #____

AT HOME Explain to someone at home why the whole must be bigger than the part when the percent is less than 100%.