

Lesson 5-5 Goldman Absent

Monday, December 6, 2021 9:52 AM

Notes 5-5 - Goldman

Thursday, October 24, 2019 1:00 PM

Divide by Multiples of 10

Lesson 5-5
Divide by Multiples of 10

Estimate: $20 \overline{) 168}$

$8 \cdot 20 = 160$
 $168 - 160 = 8$

They can buy 8 uniforms.
There is \$8 left over.

Look Back! **MP2 Reasoning** How much more money is needed to buy an additional uniform?
 $\$8 + \$12 = \$20$
 $\$20 - \$8 = \$12$

(\$12 would be needed)

What Are the Steps in Dividing by a Multiple of Ten?

Step 1
Find $240 \div 20$.
Estimate: $240 \div 20 = 12$

Step 2
Bring down the ones. Divide the ones.
Divide: $40 \div 20 = 2$
Multiply: $2 \times 20 = 40$
Subtract: $40 - 40 = 0$
Compare: $0 < 20$

Since there is no remainder, one more bus is needed. A total of 13 buses is needed. The answer is reasonable because 13 is close to the estimate.

Compare **MP3 Construct Arguments** For the example above, show how you can check that the quotient is correct by multiplying.

$10 \cdot 2 = 20$
 $20 \cdot 10 = 200$

$12 \cdot 20 = 240$
 $240 - 240 = 0$

$12 \cdot 20 = 240$
 $240 - 240 = 0$

Guided Practice

Do You Understand?

1. In the example at the top of page 266, why is 12 buses not a reasonable estimate?
12 is between the overestimate of 20 and the underestimate of 10.

Do You Know How?

In 2 and 4, divide. Write the missing numbers.

2. $40 \overline{) 280}$
 $280 \div 20 = 14$

4. $20 \overline{) 140}$
 $140 \div 20 = 7$

Independent Practice

Divide. Write the missing numbers.

2. $20 \overline{) 140}$
 $140 \div 20 = 7$

4. $20 \overline{) 140}$
 $140 \div 20 = 7$

Name _____
Math _____

11/18/19
MB265-266

① $140 \div 20 = 7$
 $137 \div 20 = 6$
 $120 \div 20 = 6$

$6 \cdot 17 \rightarrow 7 \text{ buses}$

$20 \overline{) 137}$
 120
 17

③ $400 \div 20 = 20$
 $280 \div 20 = 14$
 $200 \div 20 = 10$

$20 \overline{) 280}$
 200
 80

1. $20 \overline{) 375}$ 2. $40 \overline{) 375}$ 3. $30 \overline{) 375}$

4. 40943 5. 50225 10. 70587

11. 60220 12. 60292 13. 60275

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Math Practices and Problem Solving

14. **MP2 Reasoning with Units** Emily is moving from Grand Junction to Durbin. The moving van averages 18 miles each hour. About how many hours does the van take to reach Durbin? Explain your work.

15. **MP1 Make Sense and Persevere** Todd makes 1000 to three different plans for gas use to save \$200. Complete the table. Which plan will save the most \$200 in gas that 10 weeks and have \$200 left? Explain how you found your answer.

Plan	Amount to Save	Number of Weeks	Amount Left
A	\$200	22	
B	\$200		
C	\$200		
D	\$200		

16. **MP4 Model with Math** The Post-Launch Safety group is 1200 feet long. There is one person falling for every ten feet of length. Write and solve an equation to find how many people are falling from the pole.

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18. **Common Core Assessment** Find an expression that gives a quotient of 623. Show the expression in the box.

40 $\overline{) 623}$ 675 = 40

360 23

375

$$1200 \div 20 = 11$$

$$1200 \div 20 = 10$$

$$20 \overline{) 375}$$

$$\begin{array}{r} 18 \\ - 40 \\ \hline 20 \\ - 20 \\ \hline 0 \end{array}$$

13

$$40 \overline{) 375}$$

$$\begin{array}{r} 9 \\ - 360 \\ \hline 15 \end{array}$$

$$40 \overline{) 375}$$

$$\begin{array}{r} 9 \\ - 360 \\ \hline 15 \end{array}$$

Complete 5, 16, 19

5

$$400 \div 20 = 20$$

$$300 \div 20 = n$$

$$200 \div 20 = 10$$

$$20 \overline{) 300}$$

$$\begin{array}{r} 15 \\ - 20 \\ \hline 100 \\ - 100 \\ \hline 0 \end{array}$$

16

$$1400 \div 70 = 20$$

$$975 \div 70 = x$$

$$700 \div 70 = 10$$

$$20 \overline{) 975}$$

$$\begin{array}{r} 48 \\ - 70 \\ \hline 275 \\ - 210 \\ \hline 65 \end{array}$$

No. There is enough water for 13 experiments with 65 mL of water left over.

Name _____

Another Look!

Bo has 623 bottle caps to divide equally among 40 friends. How many caps will each friend get? Will there be any caps left?

Step 1 Divide the tens.

$$40 \overline{) 623}$$

62 tens \div 40 = 1 ten

$40 \times 1 \text{ ten} = 40 \text{ tens}$

Step 2 Subtract the tens. Bring down the ones.

$$\begin{array}{r} 1 \\ 40 \overline{) 623} \\ - 40 \\ \hline 223 \end{array}$$

Step 3 Divide the ones.

$$40 \overline{) 623}$$

223 ones \div 40 = 5 ones

$40 \times 5 \text{ ones} = 200 \text{ ones}$

Step 4 Subtract the ones. Write the remainder.

$$\begin{array}{r} 15 \text{ R } 23 \\ 40 \overline{) 623} \\ - 40 \\ \hline 223 \\ - 200 \\ \hline 23 \end{array}$$

Each friend will get 15 caps and 23 caps will be left.

Leveled Practice In 1–8, find the quotient.

1. $20 \overline{) 359}$

2. $30 \overline{) 480}$

3. $40 \overline{) 746}$

4. $50 \overline{) 800}$

5. $70 \overline{) 632}$

6. $60 \overline{) 779}$

7. $40 \overline{) 920}$

8. $30 \overline{) 332}$

Remember to compare the remainder to the divisor.

9. **Use Structure** Why can the calculations in red be thought of as simpler problems? Describe the simpler problems.

$$\begin{array}{r} 12 \text{ R } 13 \\ 80 \overline{) 973} \\ \underline{-80} \\ 173 \\ \underline{-160} \\ 13 \end{array}$$

← 97 tens = 80 groups
← 80 × 1 ten
← 173 ones = 80 groups
← 80 × 2 ones

10. **Construct Arguments** A county has 90 schools. The county received 992 new computers. Are there enough computers so that each school can get 11 new computers? Explain.

11. Twin Oaks Soccer Field is a rectangle. The longer side of the field is 108 yards long. What is the perimeter of the field?



12. **Higher Order Thinking** Liza makes 20 minutes of phone calls each day. Which plan will give Liza enough minutes for June, with between 30 and 50 minutes left? Show your work.

Speed Link Company Phone Plans

Plan Name	Number of Minutes Per Month
Connect	550
Chat	625
Share	650
Catch Up	700

13. Mark and his brother signed up for the Catch Up phone plan. They share the minutes every month equally. How many minutes can Mark use each day without going over his share of minutes?

Assessment

14. Find an expression that gives a quotient of 16. Write the expression in the box.

$$\begin{array}{r} 16 \\ \times 40 \\ \hline 640 \end{array} \quad 640 \div 40 = 16$$

Quotient: 16

600 ÷ 40	620 ÷ 40	640 ÷ 40
644 ÷ 40	660 ÷ 40	680 ÷ 40

Divide
Multiply
Subtract
Check the divisor
Bring down

① $400 \div 20 = 20$
 $359 \div 20 = x$
 $200 \div 20 = 10$

$$\begin{array}{r} \times 17 \text{ R } 19 \\ 20 \overline{) 359} \\ \underline{-20} \\ 159 \\ \underline{-140} \\ 19 \end{array} \quad \begin{array}{r} 17 \\ \times 20 \\ \hline 340 \\ + 19 \\ \hline 359 \end{array}$$

② $600 \div 30 = 20$
 $480 \div 30 = x$
 $300 \div 30 = 10$

$$\begin{array}{r} \times 16 \\ 30 \overline{) 480} \\ \underline{-30} \\ 180 \\ \underline{-180} \\ 0 \end{array} \quad \begin{array}{r} 16 \\ \times 30 \\ \hline 480 \end{array}$$

Complete # 3, 8, 10 & 14

③ $800 \div 40 = 20$
 $746 \div 40 = x$
 $400 \div 40 = 10$

$$\begin{array}{r} \times 18 \text{ R } 26 \\ 40 \overline{) 746} \\ \underline{-40} \\ 346 \\ \underline{-320} \\ 26 \end{array}$$

$$\begin{array}{r} 18 \\ \times 40 \\ \hline 720 \\ + 26 \\ \hline 746 \end{array}$$

$$\begin{aligned} 146 &: 40 = x \\ 400 &: 40 = 10 \end{aligned}$$

$$\begin{array}{r} 49 \cdot 146 \\ -40 \downarrow \\ \hline 346 \\ -320 \\ \hline 26 \end{array}$$

$$\begin{array}{r} \times 40 \\ 720 \\ + 26 \\ \hline 746 \end{array}$$

⑧

$$\begin{aligned} 360 &: 30 = 12 \\ 332 &: 30 = x \\ 330 &: 30 = 11 \end{aligned}$$

$$\begin{aligned} 600 &: 30 = 20 \\ 332 &: 30 = x \\ 300 &: 30 = 10 \end{aligned}$$

$$\begin{array}{r} \times 11r2 \\ 30 \overline{) 332} \\ -30 \uparrow \\ \hline 32 \\ -30 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 11 \\ \times 30 \\ \hline 330 \\ + 2 \\ \hline 332 \end{array}$$

⑩

$$\begin{aligned} 1080 &: 90 = 12 \\ 992 &: 90 = c \\ 990 &: 90 = 11 \end{aligned}$$

$$\begin{aligned} 1800 &: 90 = 20 \\ 992 &: 90 = c \\ 900 &: 90 = 10 \end{aligned}$$

$$\begin{array}{r} \times 11r2 \\ 90 \overline{) 992} \\ -90 \uparrow \\ \hline 92 \\ -90 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 11 \\ \times 90 \\ \hline 990 \\ + 2 \\ \hline 992 \end{array}$$

Yes, the quotient is 11r2. Each school gets 11 computers with 2 computers left over.