Student Guide

Paper-and-Pencil Division (SG pp. 310–312)
Questions 1–11

Methods will vary.

1. **A.** $8563 \div 4 = 2140$ R3

   B. $1256 \div 7 = 179$ R3

   C. $547 \div 9 = 60$ R7

   D. $3476 \div 4 = 869$

2. **A.** $901 \div 8 = 112$ R5; $8 \times 112 = 896$ and $896 + 5 = 901$

   B. $9017 \div 8 = 1127$ R1; $8 \times 1127 = 9016$ and $9016 + 1 = 9017$

3.* See the discussion in the lesson.

4. **A.** $674 \div 5 = 134$ R4

   B. $5667 \div 5 = 1133$ R2

   C. $5274 \div 2 = 2637$

   D. $5277 \div 12 = 439$ R9

   E. $8413 \div 7 = 1201$ R6

   F. $792 \div 11 = 72$

   G. $3341 \div 4 = 835$ R1

   H. $987 \div 8 = 123$ R3

5. $11 \times 72 = 792$; $8 \times 123 = 984$ and $984 + 3 = 987$

6. **A.** 10 snack bags

   B. 10 or 100 snack bags

   C. 120 is the number of snack bags sold if 12 customers bought 10 snack bags each.

   D. 10 snack bags

   E. 55 snack bags left

   F. 4 snack bags

   G. 24 snack bags

   H. 7 snack bags left over

7. 4,172 snack bags; $14,602 \div 3.50 = 4,172$

8. **A.** $240; $1200 \div 5 = 240$

   B. $30; $240 \div 8 = 30$

9. 203 R2

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1. Solve these problems using the partial quotients method.

   A. $4\overline{)8563}$ **B.** $7\overline{)1256}$

   C. $547 \div 9$ **D.** $3476 \div 4$

2. Solve the following problems with the partial quotients method. Then check the answers with multiplication.

   A. $8\overline{)901}$ **B.** $9017 \div 8$

3. Compare the following solutions to $739 \div 5$. Discuss how they are the same and how they are different. Discuss why some solutions use fewer steps.

147 R4		147 R4		147 R4		147 R4	
$5\overline{)739}$	20	$5\overline{)739}$	100	$5\overline{)739}$	125	$5\overline{)739}$	140
100		500		625		700	
639	40	239	40	114	20	39	7
200		200		100		35	
439	80	39	7	14	2	4	147
400		35		10			
39	7	4	147	4	147		
35							
4	147						

4. Solve the following problems using the partial quotients method. Think about what you observed in Question 3 to help keep the number of steps small. Check to be sure your answers are reasonable.

   A. $674 \div 5$ **B.** $5667 \div 5$

   C. $5274 \div 2$ **D.** $12\overline{)5277}$

   E. $7\overline{)8413}$ **F.** $792 \div 11$

   G. $4\overline{)3341}$ **H.** $987 \div 8$

5. Show how to use multiplication to check your answers to Questions 4F and 4H.

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✓ **Check-In: Questions 6-10**

Refer to the *Multiplication and Division Facts* page and the *Division Strategies Menu* in the *Student Guide* Reference section.

6. Ana and Linda have 295 Crunchy Nut bags to sell. They are going to ask 12 of their neighbors and relatives to buy some. If each customer bought the same amount, how many snack bags would each person buy? Will any snack bags be left over? Help Ana and Linda think through their solution.

$12\overline{)295}$	10
120	
175	10
120	
55	4
48	
7	24

   A. First try: _____ snack bags

   B. You have used $10 \times$ _____ or _____ snack bags.

   C. What does the 120 mean?

   D. Second try: _____ snack bags

   E. What does the 55 mean?

   F. Next try: _____ snack bags

   G. How many snack bags would each person buy?

   H. How many snack bags are left over?

7. The debate team raised $14,602. How many Crunchy Nut snack bags did the debate team sell if each snack bag cost $3.50?

8. The debate team budgeted $1200 for meals for the five-day trip to Washington, D.C.

   A. How much will the team spend each day on food?

   B. If all eight members get the same food allowance, how much will each person get?

9. $2235 \div 11$

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*Answers and/or discussion are included in the lesson.

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10. 450 speeches

11. **A.** Jacob and Michael both used the partial quotients method, but they used different initial partial quotients

   B. 200

   C. 400

   D. Answers will vary. Students may say they would start with 400, because 400×4 is closer to 1800.

   E. They each used three steps.

   F. Answers will vary. Students may say two steps using 400 and then 50.

Homework (SG pp. 312–314)
Questions 1–22

1. **A.** About 800 times

   B. Less than 30 minutes. Possible response: 600 seconds is 10 minutes so 800 seconds is more but not double the amount of time, so it has to be less than 30 minutes.

2. About 6250 of each type; Possible response:
   $4 \times 6000 = 24,000$ and 4×250 is 1000.
   $24,000 + 1000 = 25,000$.

3. 56 cartons; Possible response: I divided 555 by
   10 using the partial quotients method and got
   55 with a remainder of 5. Since Mr. Haddad
   must put all the boxes in a carton he needs
   56 cartons even though one of them is not full.

4. 50 R5

5. 51

6. 120 R6

7. 171 R2

8. 261

9. 150 R9

10. **A.** Responses will vary.
    For Q# 9, $150 \times 15 + 9 = 2259$

    B. Responses will vary. One possible strategy
    for Q# 5 follows: 561 is close to 550.
    $11 \times 50 = 550$. Add one more 11 to make
    561. $50 + 1 = 51$.

    C. Stories will vary. One possible story for
    Q# 7 follows: There are 1078 dogs at the
    Spooky Pooch Parade and 6 competition
    categories. There are about the same number
    of dogs in each category. How many dogs
    are in each category? Two categories will
    have one more dog than the others.

11. Estimates will vary. Less than 100 or about
    81 days. Possible response:
    $660 + 640 = 1300$ ounces. If 8 ounces are in a
    cup and Shannon gives Sparky 2 cups a day
    that would be 16 ounces a day. 16×100 days
    would be 1600 ounces, which is close to
    but 300 ounces more than 1300 ounces.
    $16 \times 20 = 320$ ounces. So I subtracted
    20 days from 100 for about 80 days. So she
    can feed Sparky for a little more than 80 days
    with the food she has.

12. **A.** 45 minutes per day

    B. 15 minutes per walk

13. Estimates will vary.
    Between 800 and 1000 minutes.

14. $4122 \div 8 = 515$ R2

15. 203 songs in each category

16. 90; 450 minutes $\div$ 5 subjects $= 90$ minutes

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2. The TIMS Candy Company has 4 different kinds of Chocos: mint, peanut butter, crispy and plain. They make about 25,000 Chocos a day. If they make the same number of each type, about how many Chocos of each kind do they make? Show or tell how you know.

3. Ten individual boxes of Chocos fit inside a carton. Mr. Haddad is packing a school order for 555 individual boxes. How many cartons does he need? Show or tell how you know.

Compute using the partial quotients method. Remember to check whether your answer seems reasonable.

4. $14\overline{)705}$ 5. $11\overline{)561}$ 6. $1446 \div 12$
7. $1028 \div 6$ 8. $9\overline{)2349}$ 9. $2259 \div 15$

10. **A.** Pick one of Questions 4–9 and check the answer using multiplication.
    B. Pick one of Questions 4–9 and use estimation to show that your answer is reasonable.
    C. Pick one of Questions 4–9 and write a story problem to match.

11. Every day Shannon feeds her dog Sparky a mixture of dry and wet dog food. She has 660 ounces of wet food and 640 ounces of dry food. If Shannon feeds Sparky two cups of food each day, how many days can she feed Sparky? Show or tell how you know.

1 cup = 8 ounces

12. Shannon walks Sparky 315 minutes a week. She takes him outside three times a day: once in the morning, once after school, and once after dinner.
    A. How many minutes does she walk Sparky per day?
    B. How long is each walk, if each walk is the same length of time?

13. Shannon trained Sparky to sit, lie down, and roll over. It took him about 2900 minutes to learn all three tricks. About how much time does it take Sparky to learn one trick?

14. $4122 \div 8$

15. Luis has 2233 songs on his digital player and he sorted them into 11 categories. If each category has the same number, how many songs are in each category?

16. Luis has homework in English, math and music every day and science and history twice a week. He spends 450 minutes a week on homework. If he spends the same amount of time on each subject, how many minutes does he spend on each subject every week?

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17. Luis spends about 450 minutes on chores and 450 minutes on homework during the five-day school week.

    A. How many minutes per school week does Luis spend on chores and homework?

    B. How many minutes per day does Luis spend during the school week on chores and homework?

    C. How many hours per day does Luis spend on chores and homework?

18. $4\overline{)2601}$

19. Ana's violin teacher told her if she practiced 10,000 hours she would be an expert violinist.

    A. If Ana practices 30 hours every month, about how many months will it take her to be an expert?

    B. About how many years?

    C. About how many hours a month would Ana have to practice to be an expert in ten years?

    D. About how many hours a day would she have to practice?

20. Ana wants to earn money to go to summer music camp. Three weeks cost $1710. About how much money will Ana need to earn for one week of music camp?

21. Ana and Maya earned $660 dollars helping Mrs. Garcia with her housework on the weekend. She paid them each $15 a week. How many weeks did they work for Mrs. Garcia?

22. $6\overline{)2072}$

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17. A. 900 minutes

    B. 180 minutes

    C. 3 hours

18. $2061 \div 4 = 650$ R1

19. A. About 333 months

    B. About 28 years

    C. About 90 hours

    D. About 3 hours a day

20. One week of music camp costs $570.

21. 22 weeks; Possible response: $15 \times 2 = 30$. $660 \div 30 = 22$

22. $2072 \div 6 = 345$ R2