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## CH 6 – WHOLE NUMBER WORD PROBLEMS

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### □ A Few Things To Think About

1. Suppose Mallory is going to buy a \$5,000 car. She pays \$1,000 up front, called a **down payment**. That leaves \$4,000 that Mallory needs to pay off. If she pays \$100 per month for 40 months, the loan will be paid off and she will own the car.
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2. Mr. Jenkins buys a **quantity** of 6 lbs of top sirloin for a barbecue at a **unit price** of \$5.00 per pound. His **total cost** is therefore \$30.00 for the beef.
  3. Janet took a driving trip to Disneyland. The **distance** was 400 miles, and she traveled at a **rate**, or speed, of 50 miles per hour (mi/hr or mph). She thus traveled a total **time** of 8 hours.
  4. Suppose **shipping** is \$13 for the first pound, and \$6 for each additional pound. If you need to calculate the shipping for a 38-lb package, you would figure that the first pound costs \$13. The rest of the weight (37 lb) is charged at \$6/lb, so you would multiply 37 by 6, and then don't forget to include the \$13 for the first pound.
  5. You're caught driving at a speed (rate) of 75 mph. The **fine** for speeding is \$24 for each mph above the speed limit of 60 mph. Your fine is calculated by first finding the amount by

which you exceeded the speed limit (75 mph – 60 mph), and then multiplying that number by \$24.

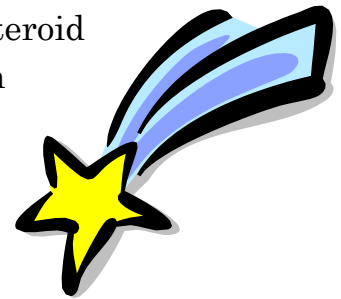
6. Suppose you're cooking a ham, and you know the weight of the ham and the number of minutes per pound it should be cooked. How would you figure out the **cooking time** in hours and minutes? Calculating the product of the weight (in lb) and the cooking time (in min/lb) would yield the total number of minutes. Dividing that result by 60 -- and taking into account the remainder -- should give you the hours and minutes.

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## Homework

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1. The comet is close to Earth every 6 years, while the asteroid is close every 16 years. If they're both close to Earth in the year 2053, what is the next year that they will both be close to Earth again?
2. I call Mom every 8 days and my brother every 6 days. If I called both of them on Thursday, what day of the week will it be the next time I call both of them again?
3. I call Dad every 14 days and my sister every 6 days. If I called both of them today, how many days from now will I be calling both of them again?
4. The comet is close to Earth every 14 years, while the asteroid is close every 19 years. If they're both close to Earth in the year 2817, when is the earliest they will both be close to Earth again?
5. Shipping is \$13 for the first pound, and \$6 for each additional pound. Find the shipping for a 38-lb package.



6. The total cost of a car is \$5,351, and you're going to finance it for 36 months. If you can afford payments of \$102 per month, how much will be required for the down payment?
7. If an orange crate holds a maximum of 17 oranges, how many crates will it take to store 156 oranges?
8. At an average speed of 31 mph, how long would it take to travel 496 miles?
9. How many 5-person teams can be created from a group of 184 people?
10. The fine for speeding is \$34 for each mph above the speed limit of 44 mph. What is the total fine if you're caught traveling 55 mph?
11. The total cost of a car is \$10,311, and you're going to finance it for 34 months. If the dealer requires a down payment of \$1,777, what will be your monthly payment?
12. The cooking time for chicken is 22 min/lb. How long (in hrs and mins) will it take to cook a 9-lb chicken?
13. The starting checking account balance is \$2,364. Total deposits were \$552 and total checks were \$519. Calculate the ending balance.
14. The cooking time is 30 min/lb. How long (in hrs and mins) will it take to cook an 18-lb chicken?
15. The fine for speeding is \$26 for each mph above the speed limit of 42 mph. What is the total fine if you're caught traveling 62 mph?
16. How many 9-person teams can be created from a group of 75 people?
17. The starting checking account balance is \$3,617. Total deposits were \$904 and total checks were \$638. You had \$16 in interest. Calculate the ending balance.
18. Shipping is \$11 for the first pound, and \$5 for each additional pound. Find the shipping for a 35-lb package.
19. Find the total cost if you bought 16 items at \$74 per item.



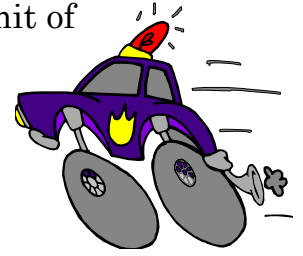
20. If the maximum capacity of an elevator is 20 people, how many trips will it take to transport 182 people?
21. If you travel 396 miles in 11 hours, find the average speed.
22. The total cost of a car is \$8,470, and you're going to finance it for 41 months. If you can afford payments of \$185 per month, how much will be required for the down payment?
23. Find the quantity if you paid \$552 and the unit price was \$46.
24. The comet is close to Earth every 6 years, while the asteroid is close every 7 years. If they're both close to Earth in the year 2674, when will they both be close to Earth again, at the earliest?
25. At an average speed of 72 mph, how long would it take to travel 1,440 miles?
26. The fine for speeding is \$46 for each mph above the speed limit of 25 mph. What is the total fine if you're caught traveling 81 mph?
27. At an average speed of 70 mph, how long would it take to travel 210 miles?
28. If the maximum capacity of an elevator is 15 people, how many trips will it take to transport 312 people?
29. The total cost of a car is \$8,886, and you're going to finance it for 48 months. If the dealer requires a down payment of \$918, what will be your monthly payment?
30. How many 7-person teams can be created from a group of 92 people?
31. Find the quantity if you paid \$444 and the unit price was \$37.
32. The starting checking account balance is \$3,746. Total deposits were \$501 and total checks were \$450. You had \$11 in interest. Calculate the ending balance.
33. The total cost of a car is \$8,585, and you're going to finance it for 49 months. If you can afford payments of \$135 per month, how much will be required for the down payment?



34. The cooking time is 40 min/lb. How long (in hrs and mins) will it take to cook a 22-lb ham?
35. If a lettuce crate holds a maximum of 7 heads of lettuce, how many crates will it take to store 60 heads of lettuce?
36. Shipping is \$14 for the first pound, and \$5 for each additional pound. Find the shipping for a 29-lb package.
37. Shipping is \$12 for the first pound, and \$4 for each additional pound. Find the shipping for a 13-lb package.
38. How many 7-person teams can be created from a group of 86 people?
39. If you travel at an average speed of 65 mph for 8 hrs, find the distance.
40. The cooking time is 22 min/lb. How long (in hrs and mins) will it take to cook a 9-lb ham?
41. If you make a down payment of \$1,174 for a car, and then make 31 payments of \$233 per month, what is the total you will be paying for the car?
42. Find the quantity if you paid \$1,350 and the unit price was \$90.
43. The comet is close to Earth every 8 years, while the asteroid is close every 16 years. If they're both close to Earth in the year 2021, when will they both be close to Earth again?
44. Mr. Loud wore his red socks and red shirt on Tuesday. If he wears his red socks every 20 days and his red shirt every 24 days, on what day of the week will he be wearing both the red socks and the red shirt?
45. Find the unit price if you paid \$126 for 14 items.
46. If an orange crate holds a maximum of 6 oranges, how many crates will it take to store 97 oranges?
47. At an average speed of 59 mph, how long would it take to travel 767 miles?



48. The fine for speeding is \$26 for each mph above the speed limit of 42 mph. What is the total fine if you're caught traveling 62 mph?
49. If the maximum capacity of an elevator is 16 people, how many trips will it take to transport 401 people?
50. If an orange crate holds a maximum of 25 oranges, how many crates will it take to store 676 oranges?
51. How many 11-person teams can be created from a group of 516 people?
52. Sharon just bought a used car, and had a complete service at 39,450 miles. If the air filter should be replaced every 3,000 miles, and the oil every 4,500 miles, what will the odometer read when it's time to change both the air filter and the oil?
53. A cluster on a hard drive holds 2048 bytes. If a file contains 25,000 bytes, how many clusters will it take to hold the file?
54. Jack just bought a new car. If the engine should be tuned up every 6,000 miles, and the oil changed every 2,500 miles, how many miles until it's time to both tune the engine and change the oil?



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## Solutions

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| 1. The year 2101 | 2. Sunday   | 3. 42 days        |
| 4. The year 3083 | 5. \$235    | 6. \$1,679        |
| 7. 10 crates     | 8. 16 hrs   | 9. 36 teams       |
| 10. \$374        | 11. \$251   | 12. 3 hrs 18 mins |
| 13. \$2,397      | 14. 9 hours | 15. \$520         |

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|---------------------------|------------------------|--------------------------|
| <b>16.</b> 8 teams        | <b>17.</b> \$3,899     | <b>18.</b> \$181         |
| <b>19.</b> \$1,184        | <b>20.</b> 10 trips    | <b>21.</b> 36 mph        |
| <b>22.</b> \$885          | <b>23.</b> 12 items    | <b>24.</b> The year 2716 |
| <b>25.</b> 20 hrs         | <b>26.</b> \$2,576     | <b>27.</b> 3 hrs         |
| <b>28.</b> 21 trips       | <b>29.</b> \$166       | <b>30.</b> 13 teams      |
| <b>31.</b> 12 items       | <b>32.</b> \$3,808     | <b>33.</b> \$1,970       |
| <b>34.</b> 14 hrs 40 mins | <b>35.</b> 9 crates    | <b>36.</b> \$154         |
| <b>37.</b> \$60           | <b>38.</b> 12 teams    | <b>39.</b> 520 mi        |
| <b>40.</b> 3 hrs 18 mins  | <b>41.</b> \$8,397     | <b>42.</b> 15 items      |
| <b>43.</b> The year 2037  | <b>44.</b> Wednesday   | <b>45.</b> \$9           |
| <b>46.</b> 17 crates      | <b>47.</b> 13 hrs      | <b>48.</b> \$520         |
| <b>49.</b> 26 trips       | <b>50.</b> 28 crates   | <b>51.</b> 46 teams      |
| <b>52.</b> 48,450 mi      | <b>53.</b> 13 clusters | <b>54.</b> 30,000 mi     |

“What sculpture is to a  
block of marble,  
education is to the  
human soul.”

**Joseph Addison**