HANDS-ON EQUATIONS® VERBAL PROBLEMS BOOK

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Example: Six years from now, Miriam will be 2 years older than three times her present age. How old is she now?

Solution:

Let Miriam's present age be: ▲

▲= 2

Answer: Miriam is now 2. Check: 8 = 8.

Fourth Edition

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21. Andrew has one set of model cars. His brother gives him 5 more sets for his birthday. Then Andrew gives 1 set to a friend. Now, Andrew has 20 model cars left. If all the sets have the same number of model cars, how many model cars are in each set?

Solution:
Let the number of model cars in each set be: ▲
After giving one set to his friend, Andrew has five sets left: ▲▲▲▲▲

▲ = 4

Answer: There are 4 model cars in each set. Check: 20 = 20.

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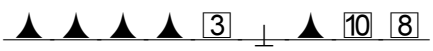
22. Mitch collects comic books. He has 4 sets of the same title comics and 3 other comic books. His friend Ashley has 1 set, of the same type as Mitch, and 18 other comics. The total number of comic books owned by Mitch and Ashley is the same. All the sets have the same number of comics. How many comic books are in each set?

Solution:
Let the number of comic books in each set be: ▲



▲ = 5

Answer: There are 5 comic books in each set. Check: 23 = 23.

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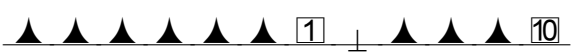
23. Julie can buy 6 basketball tickets and one $1 box of pretzels for the same price as 3 basketball tickets and ten $1 boxes of pretzels. How much does a basketball ticket cost? (PICTORIAL)

Solution:
Let the cost of a basketball ticket be: ▲



▲ = 3

Answer: The cost of each basketball ticket is $3. Check: 19 = 19.

Answer: **The numbers are 3, 5 and 7. Check: 15 = 15**

Please see pages 202-203 of Appendix II for suggestions on teaching verbal problems involving consecutive odd numbers.

4. The last of three consecutive numbers, increased by 10, is equal to the sum of the first two consecutive numbers. Find the numbers. [I, 4]

Solution:

Let the 1st number be: ♟

Let the 2nd number be: ♟ 1

Let the 3rd number be: ♟ 2

♟ 2 10 = ♟ ♟ 1

♟=11

Answer: **The numbers are 11, 12 and 13. Check: 23 = 23**

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5. The sum of three consecutive numbers is the same as twice the value of the last number. Find the numbers. [I, 7]

Solution:

Let the 1st number be: ♟

Let the 2nd number be: ♟ 1

Let the 3rd number be: ♟ 2

♟ ♟ 1 ♟ 2 = ♟ 2 ♟ 2

♟=1

Answer: **The numbers are 1, 2 and 3. Check: 6 = 6.**

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6. Find three consecutive numbers such that triple the last number gives the same result as twice the sum of the first two numbers. [I, 7]

Solution:

Let the 1st number be: ♟

Let the 2nd number be: ♟ 1

Let the 3rd number be: ♟ 2

The sum of the first two numbers is: ♟ ♟ 1

♟ 2 ♟ 2 ♟ 2 = ♟ ♟ 1 ♟ ♟ 1

♟= 4

Answer: **The numbers are 4, 5 and 6. Check: 18 = 18.**

QUESTIONS FOR AGE PROBLEMS: LEVEL III

26. Jose is 6 years younger than twice Juan's age. In 5 years, Juan will be Jose's present age. How old is each?

27. Mary is 4 years younger than three times Cheryl's age. If Mary's age 3 years ago is the same as Cheryl's age 9 years from now, how old is each?

28. Six years ago, Marla was ½ her present age, increased by 10. How old is she now?

29. Four years ago, Cindy was two-thirds of her present age, increased by 8. How old is she now?

30. Ten years ago, Marlene was 6 years older than one-third of her present age. How old is she now?

31. Jan's age and Sari's age add up to 21. If Jan's age is increased by 2, and then doubled, she will be as old as Sari was 8 years ago. How old is each now? (PICTORIAL)

32. Lori's and Martha's age add up to 23. If Lori's age 5 years ago were to be doubled, it would give Martha's present age. How old is each? (PICTORIAL)

33. Twice Jim's age, added to Sally's age, gives a total of 30. Jim's age 4 years from now will be the same as Sally's age 8 years ago. How old is each now? (PICTORIAL)

34. Vivian is 5 years older than Carmen. When Vivian's age is doubled and then subtracted from four times Carmen's age, the result is Carmen's present age, increased by 10. How old is each?

35. Jose is 7 years younger than twice Maria's age. When Jose's age is subtracted from Maria's age, and the result doubled, the number obtained is Maria's age two years from now. How old is each?

36. Charles is 8 years older than three times Tom's age. When Charle's age is subtracted from Tom's age, the number obtained is Tom's age 14 years ago. How old is each?

9. Pedro has two toy trains, one colored red and one colored blue. The speed of the blue train is 4 inches per second faster than twice the speed of the red train. The trains start at the same point and travel in the same direction. After two seconds, they are 24 inches apart. What is the speed of each train? (PICTORIAL)

10. Two scooters travel from the same point in the same direction, leaving at the same time. The faster scooter travels at twice the speed of the slower scooter. After three seconds, the faster scooter has traveled 6 feet more than the slower scooter. What is the speed of each scooter? (PICTORIAL)

11. Two scooters travel from the same point in the same direction, leaving at the same time. The faster scooter travels 5 feet per second faster than three times the speed of the slower scooter. After three seconds, they are 39 feet apart. What is the speed of each scooter? (PICTORIAL)

12. Two wagons leave the same location and travel in opposite directions. One wagon goes 6 miles per hour faster than the other. The slower wagon leaves at noon, while the faster one leaves at 2:00 p.m. If at 4:00 p.m. the wagons are 36 miles apart, how fast does each wagon travel? (PICTORIAL)

13. Two jets leave the same location and travel in opposite directions. One jet can go 200 miles per hour faster than the other. If the slower jet left at noon, while the faster one left at 2:00 p.m., and at 4:00 p.m. the jets are 2800 miles apart, what is the speed of each jet? (PICTORIAL)

14. A southbound bus left Philadelphia at 12 noon. A northbound bus traveling at the same average speed as the southbound bus left the same terminal at 4:00 p.m. At 5:00 p.m. the two buses are 240 miles apart. Find the average speed of the buses. (PICTORIAL)

15. A freight train leaves a train station at 9:00 a.m. At 11:00 a.m. a passenger train leaves from the same train station traveling in the same direction as the freight train but on parallel tracks. The speed of the passenger train is 30 miles per hour faster than that of the freight train. Find the distance traveled by each train if the passenger train overtakes the freight train at 1:00 p.m. (PICTORIAL)

16. Two wagons travel towards each other leaving at the same time from cities located 48 miles apart. One wagon travels at the average speed of 12 miles per hour faster than the other wagon. What are the average speeds of the wagons if they pass each other in 2 hours? (PICTORIAL)