GRADE 9 (MPM1D)

SECONDARY SCHOOL MATHEMATICS TESTS AND EXAMS

(WITH COMPLETE SOLUTIONS)

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Contents

TEST 8

1. Tom has 4 more nickels than dimes. He has $1.70 altogether. How many nickels does he have?

2. The base of an isosceles triangle is 6cm longer than the other two sides. If the perimeter is 51 cm how long are the sides?

3. Three consecutive integers add to 33. Find the integers.

4. An investment of $10 000 was made. Part of it was invested at 4% and the rest at 5%. If it earned $470 in one year, how much was invested at each rate?

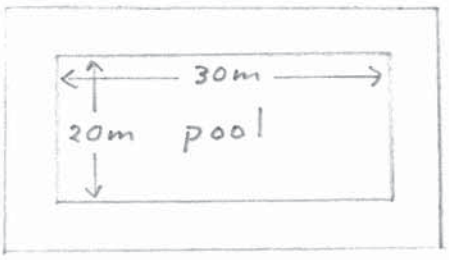
5. Kate earns $9/h at her first job and $13.50/h at her second job. One week she worked 16 hours and earned $171. How long did she work at each job?

6. The sum of 3 consecutive odd integers is 63. Find the integers.

7. The sum of two numbers is 48. If the first number plus 8 is equal to 3 times the second number, what are the numbers?

8. The length of a rectangle is 8m more than twice the width. If the perimeter is 46 m what are the dimensions?

9. The pool shown is 30m by 20m. How wide is the walkway around the pool if the outside perimeter of the walkway is 124m?



TEST 8 Solutions

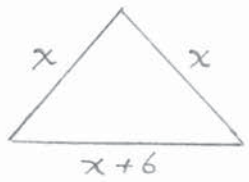
1. Let x represent the number of dimes.
Let $x+4$ represent the number of nickels.

$$10x + 5(x+4) = 170$$
$$10x + 5x + 20 = 170$$
$$15x + 20 = 170$$
$$15x = 170 - 20$$
$$\frac{15x}{15} = \frac{150}{15}$$
$$x = 10$$

$$x+4 = 10+4 = 14$$

He has 14 nickels.

2.



Let x represent the lengths of the two equal sides.
Let $x+6$ represent the length of the base.

$$x + x + x + 6 = 51$$
$$3x + 6 = 51$$
$$3x = 51 - 6$$
$$\frac{3x}{3} = \frac{45}{3}$$
$$x = 15$$

$$x+6 = 15+6 = 21$$

The lengths of the sides are 15 cm, 15 cm, and 21 cm.

3. Let $x, x+1, x+2$ represent three consecutive integers.

$$x + x+1 + x+2 = 33$$
$$3x + 3 = 33$$
$$3x = 33 - 3$$
$$\frac{3x}{3} = \frac{30}{3}$$
$$x = 10$$
$$x+1 = 11$$
$$x+2 = 12$$

The integers are 10, 11, 12.

TEST 8 Solutions

4. Let x represent the part invested at 4%.
Let $10000-x$ represent the part invested at 5%

$$0.04x + 0.05(10000-x) = 470$$
$$0.04x + 500 - 0.05x = 470$$
$$500 - 0.01x = 470$$
$$-0.01x = 470 - 500$$
$$\frac{-0.01x}{-0.01} = \frac{-30}{-0.01}$$
$$x = 3000$$
$$10000 - x = 10000 - 3000$$
$$= 7000$$

\$3000 was invested at 4% and
\$7000 was invested at 5%.

5. Let x represent the time at the first job.
Let $16-x$ represent the time at the second job

$$9x + 13.50(16-x) = 171$$
$$9x + 216 - 13.5x = 171$$
$$216 - 4.5x = 171$$
$$216 - 171 = 4.5x$$
$$\frac{45}{4.5} = \frac{4.5x}{4.5}$$
$$10 = x$$
$$x = 10$$
$$16 - x = 16 - 10$$
$$= 6$$

→ She worked 10 hours at the first job and 6 hours at the second job.