



# CREST Mathematics Olympiad (CMO) Worksheet *for* Class 7



**Topic**  
**Integers**



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## Worksheet on Integers

1. A number changes from  $-30$  to  $55$ . What is the increase or decrease in the number?
  - a. Increases by  $75$
  - b. Decreases by  $75$
  - c. Increases by  $85$
  - d. Decreases by  $85$
2. The product of two integers is  $-91.5$ . If one of them is  $12.2$ , what is the other integer?
  - a.  $-6$
  - b.  $-7.5$
  - c.  $-7$
  - d.  $-8.5$
3. What is the result of the following statement?  
**Statement:** Add the product of  $9.5$  and  $(-2.25)$  to the quotient of  $(-161)$  and  $23$ .
  - a.  $14.375$
  - b.  $-37$
  - c.  $28.375$
  - d.  $-375$
4. A shopkeeper earns a profit of  $\$2$  by selling a pen and incurs a loss of  $40$  cents per pencil and a loss of  $25$  cents per eraser while selling pencils and erasers of old stock. On a particular day, he earns a profit of  $\$10$ . If he sold  $10$  pens and the number of pencils and erasers he sold are in the ratio  $5 : 12$ , what is the number of pencils and erasers she sold on that day?
  - a.  $5$  Pencils and  $12$  erasers
  - b.  $10$  Pencils and  $24$  erasers
  - c.  $15$  Pencils and  $24$  erasers
  - d.  $15$  Pencils and  $36$  erasers
5. In a quiz,  $\$285$  is awarded for every correct answer and a penalty of  $\$75$  is put for every incorrect answer. Tesla answered  $15$  questions out of which only  $7$  answers were correct. How much money is earned by Tesla in the quiz?
  - a.  $\$1395$
  - b.  $\$1595$
  - c.  $\$1795$
  - d.  $\$1995$

## Answer Key

1. c - Increases by 85

**Explanation:** The number changes from  $-30$  to  $55 = 55 - (-30)$   
 $= 55 + 30 = 85$

$\therefore$  It will be increased.

2. b -  $(-7.5)$

**Explanation:** The product of two integers =  $-91.5$

One integer =  $12.2$

$\therefore$  Second integer =  $-91.5 \div 12.2$   
 $= -7.5$

3. d -  $(-28.375)$

**Explanation:** Add the product of  $9.5$  and  $(-2.25)$  to the quotient of  $(-161)$  and  $23$ .

$$= [9.5 \times (-2.25)] + [(-161) \div 23]$$

$$= (-21.375) + (-7)$$

$$= -21.375 - 7$$

$$= -28.375$$

4. b - 10 Pencils and 24 erasers

**Explanation:** By selling a pen, gain per pen = \$2

By selling pencils, loss per pencil = 40 cents

By selling an eraser, loss per eraser = 25 cents

On one day, he gains = \$10

On that day, he sold 10 pens and pencils and erasers in a ratio of 5 : 12

On ten pens, his gain =  $10 \times \$2$   
 $= \$20$

Loss on pencils and erasers =  $\$20 - \$10 = \$10 = 10 \times 100$  cents  
 $= 1000$  cents

Ratio in pencil and erasers = 5 : 12

Let the number of pencils be  $5a$  and the number of erasers is  $12a$ .

Loss on pencils and erasers = 1000 cents

$$\Rightarrow 5a \times 40 + 12a \times 25 = 1000$$

$$\Rightarrow 200a + 300a = 1000$$

$$\Rightarrow 500a = 1000$$

$$\Rightarrow a = 2$$

$$\text{Number of pencils} = 5 \times a = 5 \times 2 = 10$$

$$\text{Number of erasers} = 12 \times a = 12 \times 2 = 24$$

5. a - \$1395

**Explanation:** In a quiz, \$285 is awarded for every correct answer and \$75 is put as the penalty for every incorrect answer.

Tesla answered 15 questions but 7 questions were correct answers.

Number of correct answers = 7

Money earned for correct answers =  $7 \times \$285 = \$1995$

Number of incorrect answers =  $15 - 7 = 8$

Money deducted (Penalty) for incorrect answers =  $\$75 \times 8 = \$600$

Money earned by Tesla in the quiz =  $\$1995 - \$600 = \$1395$

**More Questions Coming Soon – Keep Learning!**



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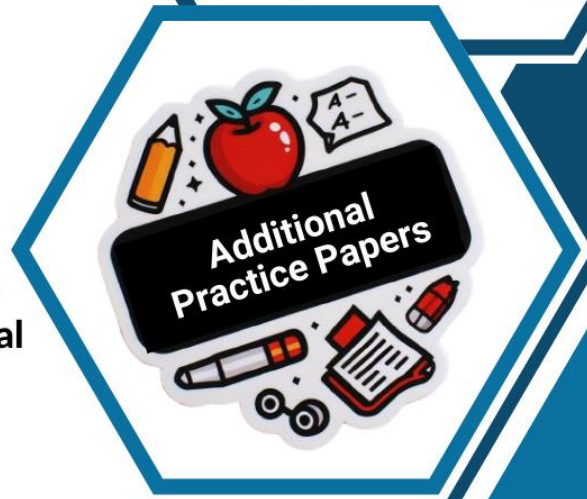
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