

LESSON 92 ANSWERS

1. B 2. B 3. D 4. C 5. A 6. C
 7. B 8. A 9. D 10. B 11. C 12. D
 13. B 14. C 15. D 16. C 17. B

Worked-out solutions to selected problems:

1. Write two equations: $3 + 4x = 5$ or
 $3 + 4x = -5$
 Solve both equations: $4x = 2$ or $4x = -8$
 $x = \frac{1}{2}$ or $x = -2$

Find the answer: $\frac{1}{2} \cdot (-2) = -1$

2. Square both sides: $5x - 1 = 3x + 7$
 Solve for x : $2x - 1 = 7$
 $2x = 8$
 $x = 4$

Find the answer: $4^2 = 16$

5.
$$\begin{array}{r} x + 1 \\ x - 4 \overline{) x^2 - 3x + k} \\ \underline{x^2 - 4x} \\ x + k \\ \underline{x - 4} \\ k + 4 \end{array}$$

Divisible means remainder is 0, so $k + 4 = 0$.
 Solve for k , and you get $k = -4$.

7. $\frac{(2 \cdot 3)^4 \cdot 3^2}{2^4} = \frac{2^4 \cdot 3^4 \cdot 3^2}{2^4} = 3^6$

8. $a = 2 \cdot \frac{1}{6} = \frac{1}{3}$

$b = 3 \cdot \frac{1}{6} = \frac{1}{2}$

$ab = \frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$

9. $\sqrt[n]{x^m} = x^{\frac{m}{n}}$

$\frac{m}{n} = 3$

$\left(\frac{m}{n}\right)^2 = \frac{m^2}{n^2} = 9$

$m^2 \text{ to } n^2 = m^2 : n^2 = \frac{m^2}{n^2} = 9$

10. There are $20 \times (3/5) = 12$ boys and $20 \times (2/5) = 8$ girls.
 So $12 - 8 = 4$ more girls will make the ratio 1:1.

11. Multiplying by 0.4 should result in a whole number.
 $0.4 \times 25 = 10$

13. Slope of line $l = -2$
 Slope of line $m = 1/2$
 $(-2)(1/2) = -1$, so the lines are perpendicular.

15. $16 \leq \frac{8x}{2} \leq 48$
 $16 \leq 4x \leq 48$
 $4 \leq x \leq 12$

16. $x = \text{age}$, $y = \text{value}$
 Use the verse variation equation $xy = k$.
 $k = 2 \times 18000 = 36000$, so the equation is $xy = 36000$.
 When $x = 6$, $y = 6000$

17. $x = \text{speed of the boat in still water}$
 $y = \text{speed of the current}$
 $x - y = \text{speed of the boat traveling upstream}$
 $x + y = \text{speed of the boat traveling downstream}$
 $x - y = 16$, $x + y = 20$
 $x = 18$, $y = 2$
 The boat would travel at 18 km/h in still water.