1. Given the equation y = 6x, what is the constant of proportionality k?

2. Given the equation $y = (\frac{3}{5})x$, what is k?

3. Given 4y = 12x, rewrite in the form y = kx and find k.

4. Given 5x = 20y, is y proportional to x? If yes, find k in y = kx.

5. Is the equation y = 7x + 3 a proportional relationship? If so, find k. If not, explain why.

6. Given y = -2x, what does the negative constant of proportionality mean? (Interpret in one sentence.)

7. Given the equation 0.25x = y, find k.

8. Given 2y = x, express y in terms of x and find k.

9. Given $y = (\frac{8}{3})x$, what is k as a decimal (rounded to 2 decimal places)?

10. Given y = 0, is this proportional to x? If yes, what is k? If not, explain.

11. Given 3x + 9 = y, is this proportional? If not, how could you tell just by looking?

12. Given $y = (-\frac{3}{4})x$, find k and describe in one short phrase what k tells you about y when x increases.

13. Given x = 4y, write y = kx and find k.

14. Given 7y = 21x, find k in y = kx.

15. Given the equation 9x = 3, can this be written as y = kx? Explain and, if possible, find k for y in terms of x.

16. Given y = x/2, what is k?

17. Given 0 = y + 5x, rewrite as y = kx and find k.

18. Are the equations y = 2x and y = 4(0.5x) the same proportional relationship? Explain and give the k values to compare.

B – Constant of proportionality from tables (19-34)

(Each small table gives x and y pairs. Determine whether y is proportional to x. If it is, find k. If not, say "not proportional.")

19.

x: 1, 2, 3

y: 4, 8, 12

20.

x: 2, 4, 6

y: 3, 6, 9

21.

x: 1, 2, 3

y: 1, 2.5, 4

22.

x: 0, 2, 4

y: 0, 6, 12

23.

x: 3, 6, 9

y: 1, 2, 3

24.

x: 5, 10, 15

y: 10, 20, 31

25.

x: 1, 3, 5

y: 0.5, 1.5, 2.5

26.

x: 2, 5, 8

y: 6, 15, 24

27.

x: 4, 8, 12

y: 1, 2, 3

28.

x: 1, 4, 7

y: 2, 8, 14

29.

x: 0, 1, 2

y: 0, 0.75, 1.5

30.

x: 10, 20, 30

y: 25, 50, 75

31.

x: 2, 4, 8

y: 5, 10, 20

32.

x: 3, 6, 12

y: 6, 12, 24

33.

x: 1, 2, 4

y: 2, 4, 9

34.

x: 0, 5, 10

y: 0, 2.5, 5

C – Constant of proportionality from tables (with equations) (35-50)

(Each problem gives a table and an equation form. Use the table to find k and complete the requested task.)

35. Table: x: 1, 2, 3; y: 2, 4, 6. Write the equation $y = kx$, find k, and then find y when $x = 10$.

36. Table: x: 1, 2, 3; y: 3, 6, 9. Equation $y = kx$. Find k and x when $y = 18$.

37. Table: x: 2, 4, 6; y: 5, 10, 15. Write $y = kx$, find k, and find y when $x = 0.5$.

38. Table: x: 0, 3, 6; y: 0, 7.5, 15. Find k and y when $x = 10$.

39. Table: x: 1, 2, 3; y: 0.5, 1, 1.5. Find k and the equation; then interpret k in context (one sentence).

40. Table: x: 4, 8, 12; y: 2, 4, 6. T: $y = kx$. Find k and predict y for $x = 20$.

41. Table: x: 1, 5, 10; y: 4, 20, 40. Find k and calculate x when $y = 28$.

42. Table: x: 2, 6, 10; y: 1, 3, 5. Write $y = kx$, find k, and explain whether k is greater or less than 1.

43. Table: x: 3, 6, 9; y: 4.5, 9, 13.5. Find k and compute y when $x = 12$.

44. Table: x: 1, 2, 4; y: 2, 4, 8. If $y = kx$, find k and check if the table suggests a proportional relationship for all three points.

45. Table: x: 0, 2, 4; y: 0, 3, 6. Write $y = kx$, find k, and then find y when $x = 7$.

46. A school charges $k per student for a field trip. Table shows number of students and total cost: students: 10, 20, 50; cost: $150, $300, $750. Find k and write the equation cost = k * students.

47. A delivery company charges by weight. Table: weight(kg): 2, 4, 6; cost($): 5.50, 11.00, 16.50. Find k (cost per kg) and cost for 15 kg.

48. A bike shop sells helmets. Table: number of helmets: 1, 3, 5; total price($): 25, 75, 125. Write the unit price (k) and find price for 8 helmets.

49. Table: x: 1, 2, 3; y: 7, 14, 21 with equation $y = kx + b$. Determine k and b. Then state whether this is proportional ($y = kx$) or not.

50. Two lemonade stands: Stand A has equation total cups = 2x (x hours open). Stand B has table hours: x: 1,2,3; cups: 5,10,15. Which stand has the greater constant of proportionality? Compare k values and interpret.