

EduSahara™ Learning Center Assignment**Grade : Class X, ICSE****Chapter : Equation of a Straight Line****Name : Parallel and Perpendicular Lines**

1. The slope of x-axis is

(i) undefined (ii) 90 (iii) 1 (iv) -1 (v) 0

2. The slope of y-axis is

(i) undefined (ii) 0 (iii) 1 (iv) -1 (v) 90

3. The slope of the line joining the points (1 , 6) and (6 , 3) is

(i) $(-\frac{3}{5})$ (ii) $(-\frac{3}{7})$ (iii) $(-\frac{1}{5})$ (iv) -1

4. The slope of the line perpendicular to the line passing through the points (7 , 4) and (- 5 , - 1) is

(i) $(-\frac{8}{3})$ (ii) $(-\frac{12}{5})$ (iii) -2 (iv) $(-\frac{14}{5})$ (v) $(-\frac{16}{7})$

5. Two straight lines are parallel if and only if their slopes are

(i) undefined (ii) 0 (iii) unequal (iv) 1 (v) equal

6. Two straight lines are perpendicular if and only if the product of their slopes is

(i) -1 (ii) 0 (iii) undefined (iv) 90 (v) 1

7. The slope of a line parallel to the line $(- 5x - 3y + 21) = 0$ is

(i) -1 (ii) -3 (iii) $(-\frac{7}{5})$ (iv) $(-\frac{7}{3})$ (v) $(-\frac{5}{3})$

8. The slope of a line perpendicular to the line $(x + y - 5) = 0$ is

(i) 2 (ii) -2 (iii) 0 (iv) 1 (v) 4

9. The equation of x-axis is

(i) $x = 1$ (ii) $y = 1$ (iii) $y = 0$ (iv) $y = x$ (v) $x = 0$

10. The equation of y-axis is

(i) $y = 1$ (ii) $y = 0$ (iii) $x = 1$ (iv) $y = x$ (v) $x = 0$

11. The equation of the line passing through (3 , 1) and parallel to the line $(5x - 6y + 13) = 0$ is

(i) $(-5x + 6y + 9) = 0$ (ii) $(-2x - 2y + 8) = 0$

(iii) $(-5x + 6y - 58) = 0$ (iv) $(5x + 3y - 14) = 0$

(v) $(10x - 3y + 44) = 0$

12. The equation of the line passing through $(0, (-1))$ and perpendicular to the line $(-10x + y + 16) = 0$ is

(i) $(11x - 7y - 53) = 0$ (ii) $(5x + y + 1) = 0$

(iii) $(x - 6y + 22) = 0$ (iv) $(x + 10y - 58) = 0$

(v) $(x + 10y + 10) = 0$

13. The equation of the line passing through $(2, (-1))$ and parallel to the join of points $(6, 3)$ and $((-4), (-6))$ is

(i) $(-5x + 12y - 6) = 0$ (ii) $(-9x + 10y + 28) = 0$

(iii) $(-x + 8y + 10) = 0$ (iv) $(5x - 6y - 16) = 0$

(v) $(-4x + 4y + 12) = 0$

14. The equation of the line passing through $(3, (-2))$ and perpendicular to the join of points $(7, 7)$ and $((-5), 8)$ is

(i) $(-12x + y + 38) = 0$ (ii) $(-9x + 4y + 35) = 0$

(iii) $(-3x + 3y) = 0$ (iv) $(6x - y - 20) = 0$

(v) $(-10x - 8y + 14) = 0$

15. The slope of any line parallel to x-axis is

(i) -1 (ii) 90 (iii) undefined (iv) 1 (v) zero

16. The slope of any line parallel to y-axis is

(i) 90 (ii) 1 (iii) undefined (iv) -1 (v) zero

17. The ratio of coefficients of x and y in the equations of any two parallel lines is

(i) not proportional (ii) not same (iii) 2 (iv) same (v) 1

18. Two non-vertical lines are parallel if and only if their slopes are

(i) not proportional (ii) not same (iii) 2 (iv) same (v) 1

19. Any line parallel to x-axis is

(i) a horizontal line (ii) an oblique line (iii) a curved line (iv) a vertical line

20. Any line parallel to y-axis is

(i) an oblique line (ii) a horizontal line (iii) a curved line (iv) a vertical line

21. A line which is neither parallel to x-axis nor y-axis is

(i) a horizontal line (ii) a vertical line (iii) a curved line (iv) an oblique line

22. Which of the following are true?

- a) Slope of any line parallel to x-axis is not defined
- b) Slope of any line parallel to y-axis is zero
- c) Slope of any line parallel to x-axis is zero
- d) Slope of any line parallel to y-axis is not defined

(i) {a,c} (ii) {b,d} (iii) {a,d,c} (iv) {c,d} (v) {a,b,c}

23. Which of the following are true ?

- a) Equations of two parallel lines differ in the constant and coefficients of x and y will not be same
- b) Equations of two parallel lines have the same constant and coefficients of x and y will not be same
- c) Equations of two parallel lines differ in the constant term only, coefficients of x and y will be same
- d) Equations of two parallel lines have the same constant and coefficients of x and y will be same

(i) {c} (ii) {a,c} (iii) {d,a,c} (iv) {b,c}

24. Equation of a straight line which is parallel to x-axis (where k is a constant) is

- (i) $x = 0$
 - (ii) $y = k$
 - (iii) $x = k$
 - (iv) $x = y$
 - (v) $y = 0$
-

25. Equation of a straight line which is parallel to y-axis (where k is a constant) is

- (i) $y = k$
 - (ii) $x = y$
 - (iii) $y = 0$
 - (iv) $x = 0$
 - (v) $x = k$
-

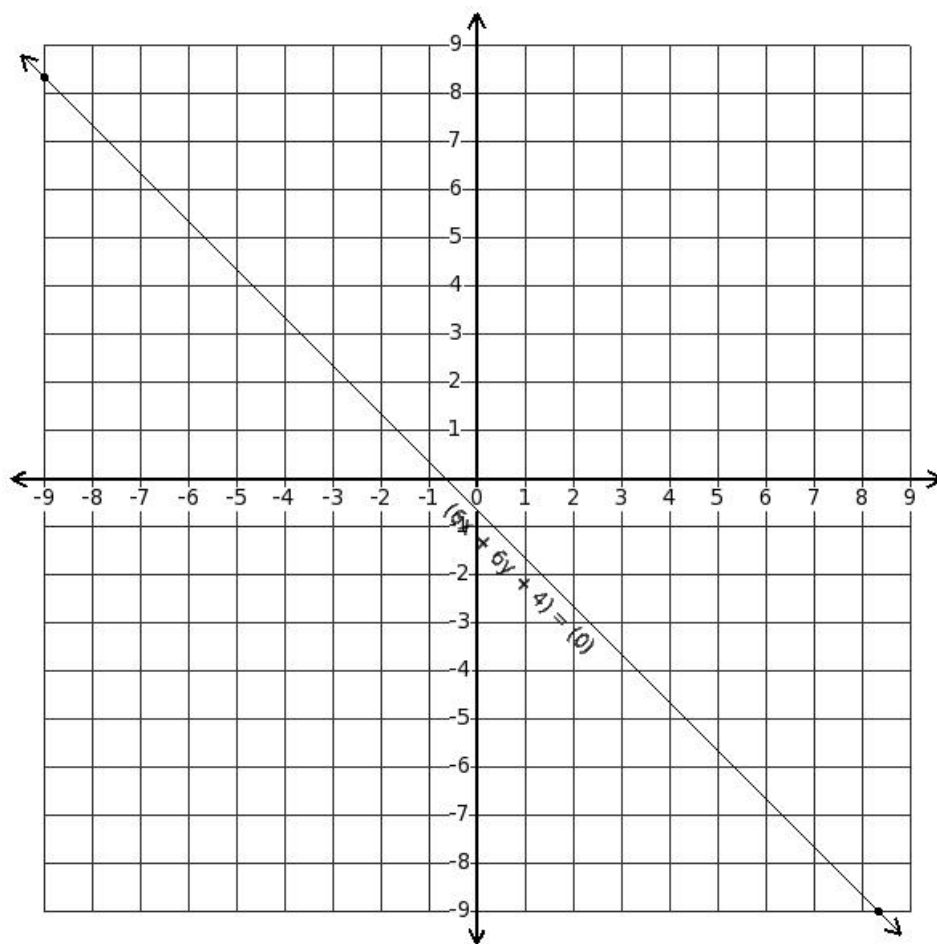
26. The slope of the line $ax + by + c = 0$ is

(i) c (ii) b (iii) a (iv) $-\frac{a}{b}$ (v) $-\frac{b}{a}$

27. In equation of the line $y = mx + c$, the slope is

(i) c (ii) m (iii) undefined (iv) y (v) x

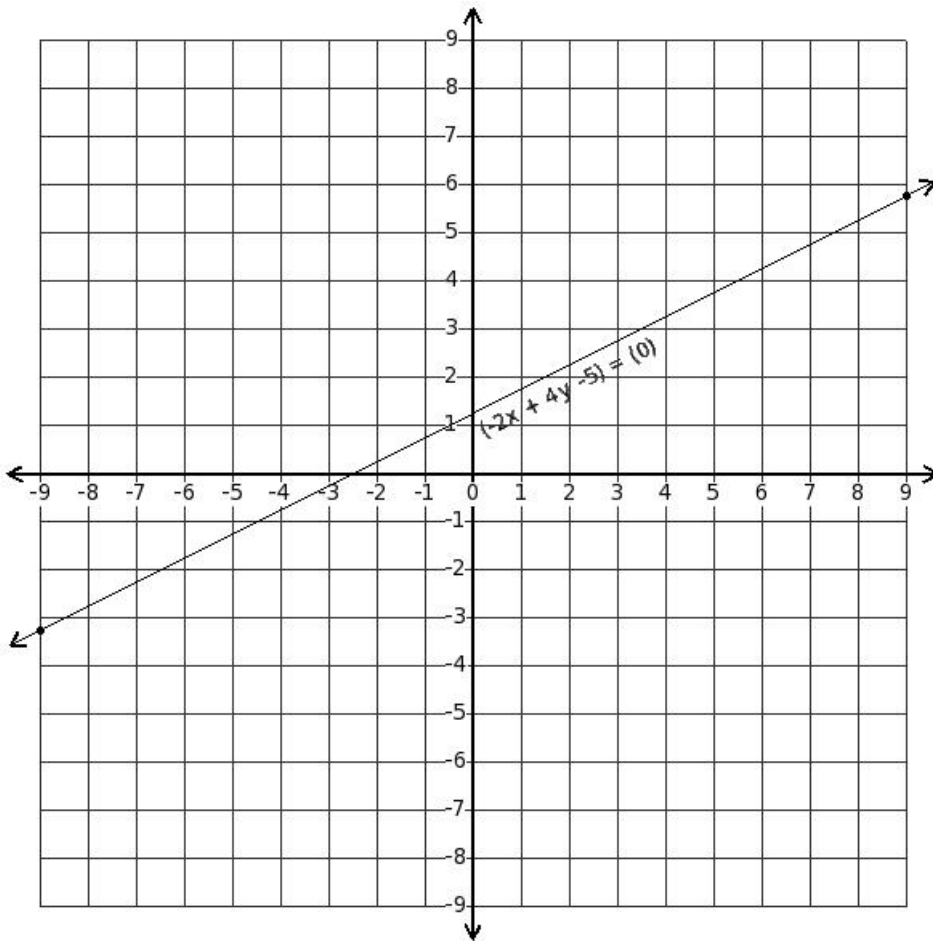
28. Find the equation parallel to the given equation



(i) $(12x + 6y - 66) = 0$ (ii) $y = 0$

(iii) $(-6x + 6y) = 0$ (iv) $(6x + 6y + 8) = 0$

29. Find the equation perpendicular to the given equation



- (i) $(-x + 2y - 3) = 0$
- (ii) $(4x - 2y - 14) = 0$
- (iii) $(2x + y - 5) = 0$
- (iv) $(-2x + 4y + 4) = 0$

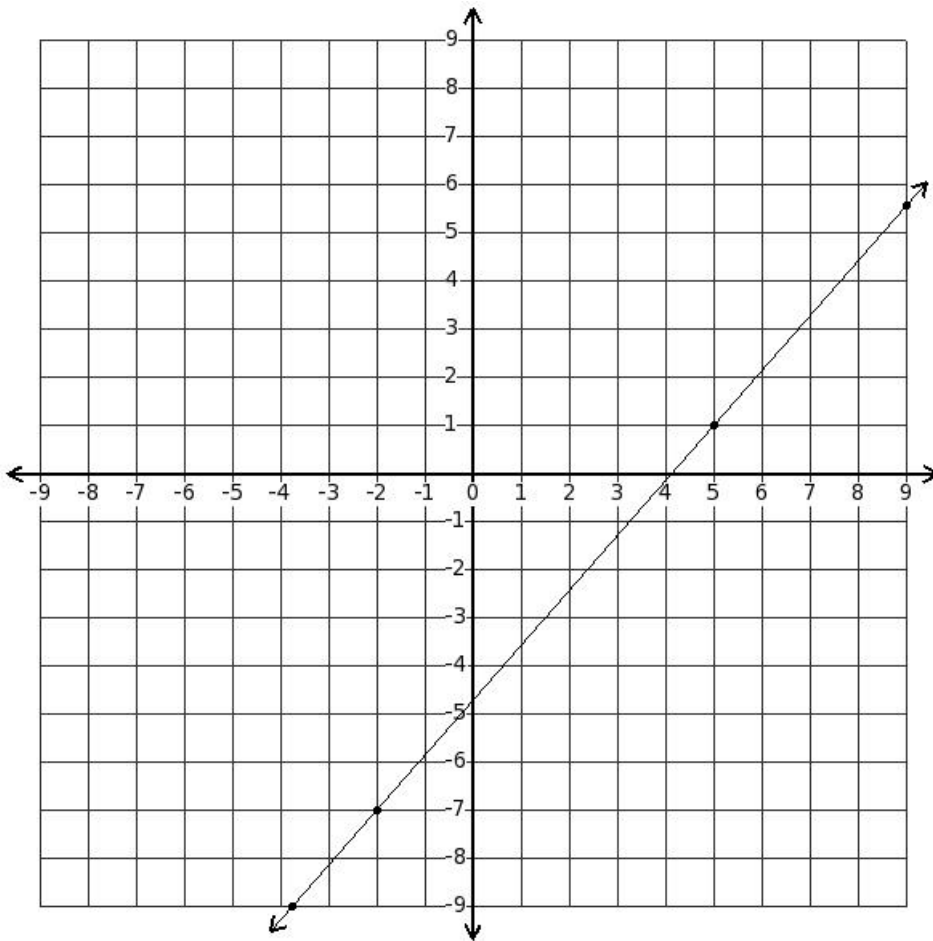
30. Find the equation parallel to the given equation $(4x - 4y + 6) = 0$

- (i) $(4x - 4y + 8) = 0$ (ii) $(y + 7) = 0$
- (iii) $(x + y + 8) = 0$ (iv) $(-8x + 4y + 4) = 0$

31. Find the equation perpendicular to the given equation $(-x + 6y - 2) = 0$

- (i) $(5x + y - 24) = 0$ (ii) $(-7x + 6y - 46) = 0$
- (iii) $(6x + y + 5) = 0$ (iv) $(-x + 6y + 4) = 0$

32. Find the slope of the displayed line



- (i) $\frac{6}{7}$ (ii) $\frac{6}{5}$ (iii) $\frac{8}{7}$ (iv) $\frac{10}{7}$ (v) $\frac{10}{9}$

33. The equation of the x-axis is

- a) $x = y$
 b) $x = 0$
 c) $y = 0$
 d) $y = 1$
 e) $x = 1$

- (i) {c} (ii) {d,e,c} (iii) {a,c} (iv) {b,c}

34. Find the equation of a straight line parallel to x-axis and passing through the point $((-4), (-5))$

- (i) $y = (-6)$ (ii) $x = (-4)$ (iii) $y = (-5)$
 (iv) $y = (-2)$ (v) $x = (-2)$

35. Find the equation of a straight line parallel to y-axis and passing through the point $(8, (-6))$

- (i) $y = (-4)$ (ii) $x = 7$ (iii) $y = (-6)$

(iv) $x = 8$ (v) $x = 10$

36. The equation of the line passing through (x_1, y_1)
and parallel to the line $ax + by + c = 0$ is

(i) $(y - y_1) = \frac{a}{b}(x - x_1)$

(ii) $(y - y_1) = \frac{b}{a}(x - x_1)$

(iii) $(y - y_1) = \frac{c}{b}(x - x_1)$

(iv) $(y - y_1) = \frac{-a}{b}(x - x_1)$

37. The equation of the line passing through (x_1, y_1)
and perpendicular to the line $ax + by + c = 0$ is

(i) $(y - y_1) = \frac{a}{b}(x - x_1)$

(ii) $(y - y_1) = \frac{-a}{b}(x - x_1)$

(iii) $(y - y_1) = \frac{c}{b}(x - x_1)$

(iv) $(y - y_1) = \frac{b}{a}(x - x_1)$

38. The slope of the line passing through the points (x_1, y_1) and (x_2, y_2)

(i) $\frac{x_2 + x_1}{y_2 + y_1}$ (ii) $\frac{y_2 - y_1}{x_2 - x_1}$ (iii) $\frac{x_2 + y_1}{y_2 + x_1}$ (iv) $\frac{x_2 - x_1}{y_2 - y_1}$ (v) $\frac{x_2 - y_1}{y_2 - x_1}$

39. The equation of the line parallel to $(-6x + y - 40) = 0$
and making a y-intercept of 4 is

(i) $(-6y + 24) = 0$ (ii) $(6x - 7y + 28) = 0$

(iii) $(4x + 28) = 0$ (iv) $(-6x + y - 4) = 0$

(v) $(-2x + y - 16) = 0$

- 40.

The equation of the line perpendicular to $(10x + 8y - 38) = 0$

and making a y-intercept of (-3) is

(i) $(-3x + 2y + 29) = 0$ (ii) $(-9x - y - 3) = 0$

(iii) $(-13x - 6y + 23) = 0$ (iv) $(-4x + 5y + 15) = 0$

(v) $(x + 7y + 21) = 0$

Find the value of k such that $(16x - 8y - 64) = 0$ and

41.

$(kx + 8y + 32) = 0$ are parallel to each other

(i) -17 (ii) -15 (iii) -14 (iv) -16 (v) -19

Find the value of k such that $(9x - y + 56) = 0$ and

42.

$(kx + 9y + 39) = 0$ are perpendicular to each other

(i) 1 (ii) 2 (iii) 4 (iv) 0 (v) -2

Find equation of the right bisector of the line segment

43.

joining the points $(7, 7)$ and $(7, -6)$

(i) $(y + 6) = 0$ (ii) $(y - 7) = 0$

(iii) $(x - 8) = 0$ (iv) $(y - 2) = 0$

(v) $(2y - 1) = 0$

$(6, -2)$, $(-3, 3)$ and $(-8, 6)$ are the vertices of triangle ABC.

44.

Find the equation of the altitude of the triangle through vertex C

(i) $(-5x + 3y + 36) = 0$ (ii) $(-9x + 8y - 102) = 0$

(iii) $(-9x + 3y - 102) = 0$ (iv) $(-7x + 4y - 33) = 0$

(v) $(-9x + 5y - 102) = 0$

$(-3, 0)$, $(-8, 1)$ and $(6, 5)$ are the vertices of triangle ABC.

45.

Find the equation of the median of the triangle through vertex C

(i) $(\frac{9}{2}x - \frac{23}{2}y + \frac{61}{2}) = 0$ (ii) $(\frac{9}{2}x - \frac{25}{2}y + \frac{61}{2}) = 0$

(iii) $(-\frac{3}{2}x + \frac{19}{2}y - \frac{43}{2}) = 0$ (iv) $(\frac{9}{2}x - \frac{21}{2}y + \frac{61}{2}) = 0$

(v) $(-3x + 2y - 9) = 0$

46. Find the equation of the line which is parallel to the line

$$(6x - y + 6) = 0 \text{ and making a y-intercept of } (-9)$$

$$(i) (-6x + 3y + 9) = 0 \quad (ii) (x + 6y + 54) = 0$$

$$(iii) (-6x + y + 9) = 0 \quad (iv) (-7x + y + 9) = 0$$

$$(v) (x + 3y + 54) = 0$$

Find the x-intercept of the line which is parallel to the line

47. $(x + y - 1) = 0$ and making a y-intercept of 1

$$(i) 0 \quad (ii) 3 \quad (iii) 1 \quad (iv) -1 \quad (v) 2$$

48. The points B (1, 4) and D (-7, 4) are the opposite vertices of a square ABCD. Find the equation of the diagonal AC

$$(i) (8x + 27) = 0$$

$$(ii) (8x + 24) = 0$$

$$(iii) (8y - 32) = 0$$

$$(iv) (8y - 35) = 0$$

$$(v) (7x + 24) = 0$$

49. Which of the following pairs of lines are parallel?

$$(i) (x - 9y + 78) = 0, (9x + y - 18) = 0$$

$$(ii) (x - 9y + 78) = 0, (-10x + 9y + 9) = 0$$

$$(iii) (x - 9y + 78) = 0, (8x + y - 16) = 0$$

$$(iv) (x - 9y + 78) = 0, (-x + 9y + 9) = 0$$

50. Which of the following pairs of lines are perpendicular?

$$(i) (-15x + y - 97) = 0, (-14x + 15y - 21) = 0$$

$$(ii) (-15x + y - 97) = 0, (-16x + y - 17) = 0$$

$$(iii) (-15x + y - 97) = 0, (x + 15y - 111) = 0$$

$$(iv) (-15x + y - 97) = 0, (-15x + y - 16) = 0$$

51. The slope of a line is the tangent of the angle made by the line with the

- (i) negative y-axis (ii) positive x-axis (iii) negative x-axis (iv) positive y-axis
-

Find the relation between x and y if the points

52. (x, y) , $((-8), (-1))$ and $(4, 1)$ are collinear

(i) $(9x + 4y - 34) = 0$

(ii) $(-4x - 14y - 46) = 0$

(iii) $(2x - 12y + 4) = 0$

(iv) $(3x + 2y - 14) = 0$

(v) $(-6x - 2y + 26) = 0$

Find the coordinates of the orthocentre of the triangle

53. whose vertices are $((-3), (-2))$, $(5, 4)$ and $((-6), (-1))$

(i) $(\frac{32}{13}, (-\frac{99}{13}))$ (ii) $(\frac{6}{13}, (-\frac{125}{13}))$ (iii) $(\frac{19}{13}, (-\frac{138}{13}))$

(iv) $((-\frac{7}{13}), (-\frac{112}{13}))$ (v) $((-\frac{20}{13}), (-\frac{151}{13}))$

54. The point of intersection of x-axis and y-axis

- (i) $(5, 0)$ (ii) $(1, 1)$ (iii) $(0, 0)$ (iv) $(1, 0)$ (v) $(0, 9)$
-

Find the value of k such that the points

55. $((-8), 6)$, $((-2), \frac{36}{7})$ and $(k, 4)$ are collinear

- (i) 5 (ii) 8 (iii) 6 (iv) 3 (v) 7
-

Find the value of k such that the points

56. $((-5), 0)$, $((-\frac{25}{13}), \frac{36}{13})$ and $(5, k)$ are collinear

- (i) 8 (ii) 11 (iii) 6 (iv) 10 (v) 9
-

57. Which of the following sets of points are collinear?

(i) $((-8), (-2))$, $(1, 7)$, $((-\frac{50}{13}), \frac{28}{13})$

(ii) $((-7), (-5))$, $((-7), 5)$, $(0, (-5))$

(iii) $(2, 1)$, $(2, 5)$, $((-7), 7)$

(iv) $(8, (-8))$, $(4, (-2))$, $((-3), (-1))$

(v) $((-4), (-3))$, $(2, (-8))$, $((-3), 8)$

58. The points B (1 , 8) and D ((- 8), 9) are the opposite vertices of a square ABCD. Find the other two vertices

- (i) ((- 4), 4), ((- 3), 13) (ii) ((- 4), 4), ((- 4), 14)
(iii) ((- 2), 6), ((- 3), 13) (iv) ((- 3), 3), ((- 3), 13)
(v) ((- 6), 2), ((- 3), 13)
-

59. Find the coordinates of the circumcentre of the triangle whose vertices are ((- 6), (- 3)) , (8 , 7) and (3 , (- 4))

- (i) ((- $\frac{85}{52}$), $\frac{275}{52}$) (ii) ((- $\frac{33}{52}$), $\frac{223}{52}$) (iii) ($\frac{71}{52}$, $\frac{327}{52}$)
(iv) ($\frac{19}{52}$, $\frac{171}{52}$) (v) ((- $\frac{137}{52}$), $\frac{119}{52}$)
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Assignment Key

- 1) (v)
- 2) (i)
- 3) (i)
- 4) (ii)
- 5) (v)
- 6) (i)
- 7) (v)
- 8) (iv)
- 9) (iii)
- 10) (v)
- 11) (i)
- 12) (v)
- 13) (ii)
- 14) (i)
- 15) (v)
- 16) (iii)
- 17) (iv)
- 18) (iv)
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- 20) (iv)
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- 22) (iv)
- 23) (i)
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- 41) (iv)
- 42) (i)
- 43) (v)
- 44) (v)
- 45) (i)
- 46) (iii)
- 47) (iii)
- 48) (ii)
- 49) (iv)
- 50) (iii)
- 51) (ii)
- 52) (iii)
- 53) (ii)
- 54) (iii)
- 55) (iii)

56) (v)

57) (i)

58) (i)

59) (ii)