MATH1040 Basic Mathematics **Practice Problems 5**

1. Answer each of the following questions, showing all working:

(**1**) Find the distance between the points $(-8, \sqrt{2})$ and $(-6, \sqrt{2})$.

(**2**) Find the gradient and y-intercept of the line $-y = x + 2$.

(**3**) Find the gradient and y-intercept of the line $-9x - 8 + 10y = 6y - 3 + 8x$.

(**4**) Find the equation of the straight line with gradient $m = 6$ passing through the point $(9, 10)$.

(**5**) Find the equation of the straight line passing through the points $(-8, 8)$ and $(1, 9)$.

(**6**) Find the equation of the line parallel to $-10y = -60 - 30x$ and passing through the point $(3, 0)$.

(**7**) Find the equation of the line parallel to $-2x - 1 - 2y = -6x + 5 - y$ and passing through the point $(-2, -10)$.

(**8**) Find the equation of the line perpendicular to $0 = 10y - 10x - 40$ and passing through the point $(-6, 6)$.

(**9**) Does the line $-3x = -y + 4$ pass through the point $(4, -10)$?

(**10**) Find the equation of the line perpendicular to $0 = -15 + 5y$ and passing through the point $(1, -5)$.

(**11**) Find the equation of the line parallel to $3y = -21$ and passing through the point $(-3, -1)$.

(**12**) Find the equation of the line perpendicular to $1 + 10x = 0$ and passing through the point $(-2, 10)$.

(**13**) Find the equation of the line parallel to $8x = -2$ and passing through the point $(3, 4)$.

2. Answer each of the following questions, showing all working:

(**1**) Find the distance between the points $(-7, -2)$ and $(-2, -1)$.

(**2**) Find the gradient and y-intercept of the line $-4x = 3y - 5$.

(**3**) Find the gradient and y-intercept of the line $6y - 1 - 2x = 3y - 4x + 2$.

(**4**) Find the equation of the straight line with gradient $m = 5$ passing through the point $(3, 10)$.

(**5**) Find the equation of the straight line passing through the points $(-9, 9)$ and $(-3, -3)$.

(**6**) Find the equation of the line parallel to $8y = -32x + 40$ and passing through the point $(1, -11)$.

(**7**) Find the equation of the line parallel to $-5x - 4y = y - 30 - 5x$ and passing through the point $(9, -9)$.

(**8**) Find the equation of the line perpendicular to $7 = -4x - y$ and passing through the point $(-28, -4)$.

(**9**) Does the line $-y + 2x = -6$ pass through the point $(-5, -4)$?

(**10**) Find the equation of the line perpendicular to $70 = 10y$ and passing through the point $(-1, -7)$.

(**11**) Find the equation of the line parallel to $4y = 32$ and passing through the point $(-5, 4)$.

(**12**) Find the equation of the line perpendicular to $8x = 0$ and passing through the point $(-1, -3)$.

(**13**) Find the equation of the line parallel to $5 + 3x = 0$ and passing through the point $(-7, -9)$.

3. Answer each of the following questions, showing all working:

(**1**) Find the distance between the points $(-5, 2)$ and $(0, -7)$.

(**2**) Find the gradient and y-intercept of the line $-1 = 2y + 2x$.

(**3**) Find the gradient and y-intercept of the line $-y - 7 - 3x = 3y + 9x - 8$.

(**4**) Find the equation of the straight line with gradient $m = -4$ passing through the point $(6, 4)$.

(**5**) Find the equation of the straight line passing through the points $(-5, -8)$ and $(-5, -3)$.

(**6**) Find the equation of the line parallel to $-36 + 18x = -6y$ and passing through the point $(4, -21)$.

(**7**) Find the equation of the line parallel to $2y + 2 + 4x = y - 7 + x$ and passing through the point $(-9, 37)$.

(**8**) Find the equation of the line perpendicular to $-36 - 12x = -4y$ and passing through the point $(30, -5)$.

(**9**) Does the line $0 = -y + 7 - 7x$ pass through the point $(-7, -6)$?

(**10**) Find the equation of the line perpendicular to $-8 = -4y$ and passing through the point $(7, 2)$.

(**11**) Find the equation of the line parallel to $0 = 10y - 60$ and passing through the point $(-2, 4)$.

(**12**) Find the equation of the line perpendicular to $-8 = 8x$ and passing through the point $(9, -9)$.

(**13**) Find the equation of the line parallel to $-9x + 8 = 0$ and passing through the point $(4, 9)$.

4. Answer each of the following questions, showing all working:

(**1**) Find the distance between the points $(-5, 7)$ and $(-5, -6)$.

(**2**) Find the gradient and y-intercept of the line $4y = 2x - 7$.

(**3**) Find the gradient and y-intercept of the line $-7y - x + 7 = -6y + 1 + 6x$.

(**4**) Find the equation of the straight line with gradient $m = -1$ passing through the point $(-4, -3)$.

(**5**) Find the equation of the straight line passing through the points $(3, -7)$ and $(0, -4)$.

(**6**) Find the equation of the line parallel to $10y + 40x = 0$ and passing through the point $(3, -21)$.

(**7**) Find the equation of the line parallel to $4x - 7y + 1 = 37 - y - 20x$ and passing through the point $(-4, -17)$.

(**8**) Find the equation of the line perpendicular to $-49 = 21x - 7y$ and passing through the point $(9, -2)$.

(**9**) Does the line $60x - 18 = 6y$ pass through the point $(6, 57)$?

(**10**) Find the equation of the line perpendicular to $4y = -12$ and passing through the point $(-4, -3)$.

(**11**) Find the equation of the line parallel to $-5y = 0$ and passing through the point $(3, 10)$.

(**12**) Find the equation of the line perpendicular to $7x = -5$ and passing through the point $(-7, 6)$.

(**13**) Find the equation of the line parallel to $8x = -7$ and passing through the point $(-2, 2)$.

5. Answer each of the following questions, showing all working:

(**1**) Find the distance between the points $(3, 1)$ and $(5, 7)$.

(**2**) Find the gradient and y-intercept of the line $-9 - 5y = -6x$.

(**3**) Find the gradient and y-intercept of the line $4 - 5y - 8x = y + 7x + 3$.

(**4**) Find the equation of the straight line with gradient $m = 5$ passing through the point $(9, -1)$.

(**5**) Find the equation of the straight line passing through the points $(1, 9)$ and $(-7, -3)$.

(**6**) Find the equation of the line parallel to $-5y - 5 = -10x$ and passing through the point $(-7, -18)$.

(**7**) Find the equation of the line parallel to $6y + 7x + 1 = -3y + 16x + 37$ and passing through the point $(-7, -12)$.

(**8**) Find the equation of the line perpendicular to $-32 + 16x = 4y$ and passing through the point $(28, -4)$.

(**9**) Does the line $6y = -30 + 30x$ pass through the point $(-7, -40)$?

(**10**) Find the equation of the line perpendicular to $-18 + 2y = 0$ and passing through the point $(-9, 10)$.

(**11**) Find the equation of the line parallel to $4y = -4$ and passing through the point $(5, 8)$.

(**12**) Find the equation of the line perpendicular to $-6x = -4$ and passing through the point $(9, 1)$.

(**13**) Find the equation of the line parallel to $-8x = 8$ and passing through the point $(8, 4)$.