Beginning Algebra
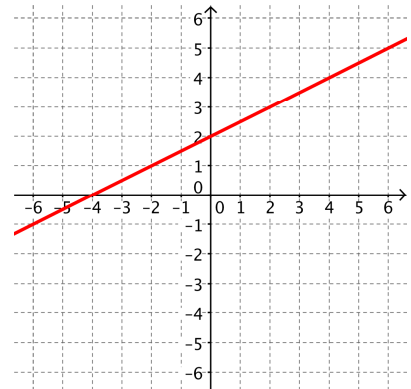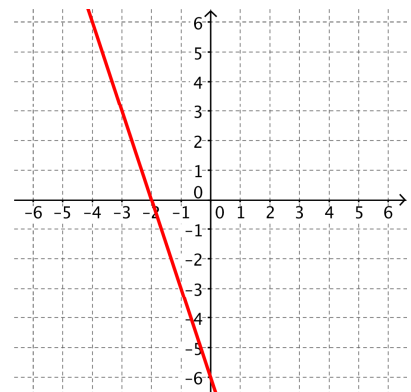## Slopes & Lines

Name: _____

Work with Graphs

(Q1.) Consider the line shown. Determine the followings...

    (a) x-intercept _____

    (b) y-intercept _____

    (c) slope _____

    (d) equation (s.i. form) _____

    (e) parallel slope $m_\parallel$ _____

    (f) perpendicular slope $m_\perp$ _____
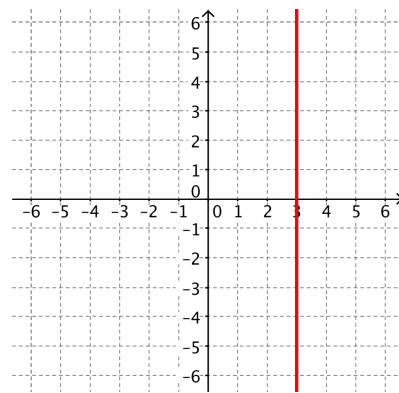

(Q2.) Consider the line shown. Determine the followings...

    (a) x-intercept _____

    (b) y-intercept _____

    (c) slope _____

    (d) equation (s.i. form) _____

    (e) parallel slope $m_\parallel$ _____

    (f) perpendicular slope $m_\perp$ _____

(Q3.) Consider the line shown. Determine the followings...

  (a) x-intercept _____

  (b) y-intercept _____

  (c) slope _____

  (d) equation _____

  (e) parallel slope $m_\parallel$ _____

  (f) perpendicular slope $m_\perp$ _____

(Q4.) Consider the line shown. Determine the followings...

  (a) x-intercept _____

  (b) y-intercept _____

  (c) slope _____

  (d) equation (s.i. form) _____

  (e) parallel slope $m_\parallel$ _____

  (f) perpendicular slope $m_\perp$ _____
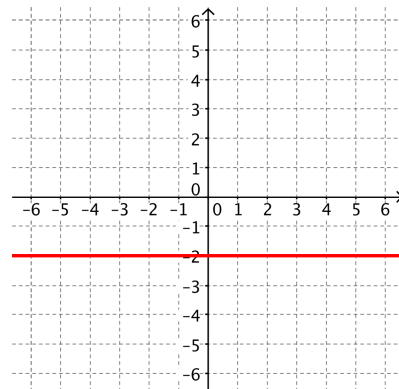
Work with Equations

(Q5.) Consider the linear equation $y = \frac{1}{4}x - 3$. Determine the followings...

  (a) x-intercept _____

  (b) y-intercept _____

  (c) slope _____

  (d) equation (s.i. form) _____

  (e) parallel slope $m_\parallel$ _____

  (f) perpendicular slope $m_\perp$ _____

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(Q6.) Consider the linear equation $y = -2x + 6$. Determine the followings...

    (a) x-intercept _____

    (b) y-intercept _____

    (c) slope _____

    (d) equation (s.i. form) _____

    (e) parallel slope $m_\parallel$ _____

    (f) perpendicular slope $m_\perp$ _____

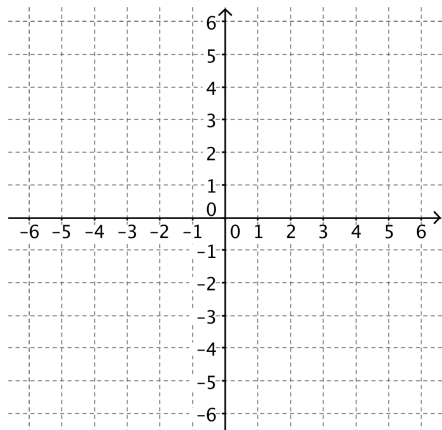(Q7.) Consider the linear equation $3x - 2y = 12$. Determine the followings...

    (a) x-intercept _____

    (b) y-intercept _____

    (c) slope _____

    (d) equation (s.i. form) _____

    (e) parallel slope $m_\parallel$ _____

    (f) perpendicular slope $m_\perp$ _____

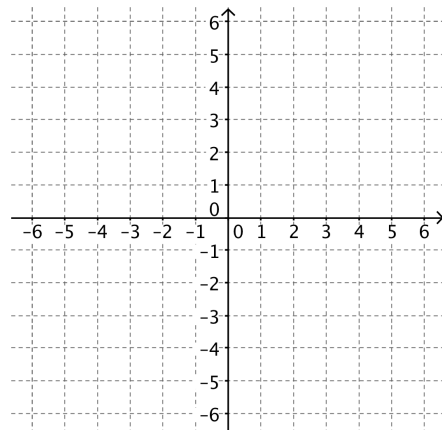(Q8.) Consider the linear equation $2x + 5y = 10$. Determine the followings...

    (a) x-intercept _____

    (b) y-intercept _____

    (c) slope _____

    (d) equation (s.i. form) _____

    (e) parallel slope $m_\parallel$ _____

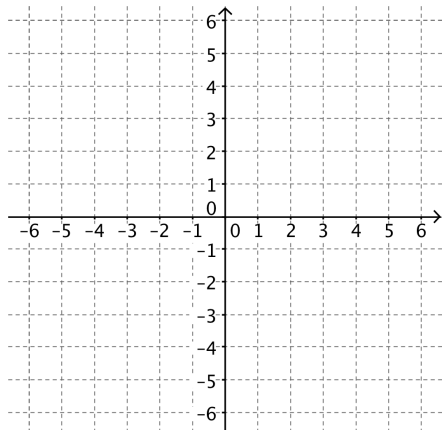   (f) perpendicular slope $m_\perp$ _____

Graph the following Equations

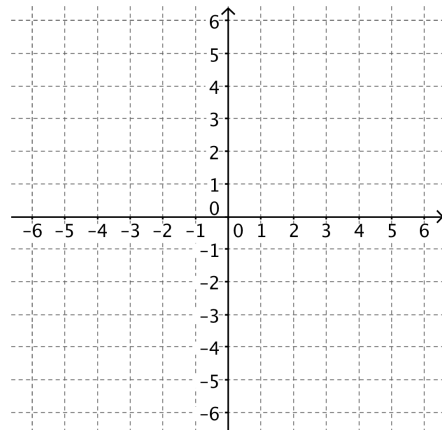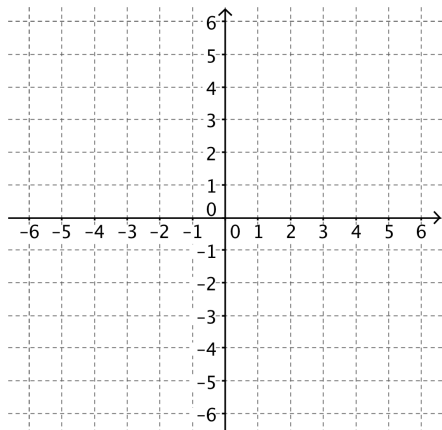(Q9.) $y = \frac{1}{4}x - 3$

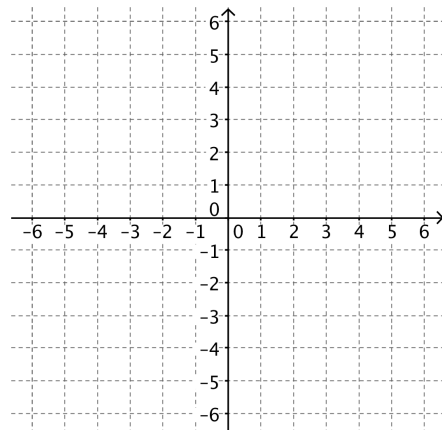(Q10.) $y = -2x + 6$

(Q11.) $x - 2y = 0$

(Q12.) $2x + 5y = 10$

(Q13.) $y = 5$

(Q14.) $x = -2$

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<u>Write an equation of the line (in s.i. form) with the following conditions...</u>
(Q15.) Passes through (-2, 1) and (-3, 7)

(Q16.) Passes through (5, 0) and (-4, 6)

(Q17.) Parallel to $y = 4x - 13$ and passes through $(\frac{1}{2}, -8)$

(Q18.) Parallel to $2x - y = 8$ and passes through $(4, 12)$

(Q19.) Perpendicular to $y = \frac{3}{5}x + 9$ and passes through $(15, 3)$

(Q20.) Perpendicular to $8x + 2y = 6$ and passes through $(-12, 3)$

Applications

(Q21.) Peter saved $4000 to live on while going to college full time. He spends $210 per week on living expenses. Which of the followings could be an algebraic expression for Peter's savings after w weeks?

(A) $210w + 4000$

(B) $-210w + 4000$

(C) $210w - 4000$

(D) $4000w - 210$

(E) $4000w + 210$

(Q22.) The cost of parking permit and tuition at a college is given by $C = 30 + 46u$, where u is the number of units you take. What does the **slope** of the graph tell you?

(A) Parking permit costs $30

(B) Tuition at the college is decreasing

(C) You are taking 46 units

(D) Tuition costs $46 per units

(E) Tuition costs $30 per units

(Q23.) The charge for renting a car is $26 per day plus an initial fee of $45. If Anna's total rental fee turned out to be $253, how many days did she rent the car?

(A) 6 days

(B) 7 days

(C) 8 days

(D) 9 days

(E) 12 days

(Q24.) Gregory purchased a treadmill on a monthly installment plan. After t months, Gregory still owes a balance of B dollars. (See graph given) What does the **slope** mean in the context of the problem?

(A) He pays $8 per month toward the balance

(B) He pays $50 per month toward the balance

(C) It will take him 50 months to pay off the balance

(D) It will take him 8 months to pay off the balance

(E) The treadmill costs $400
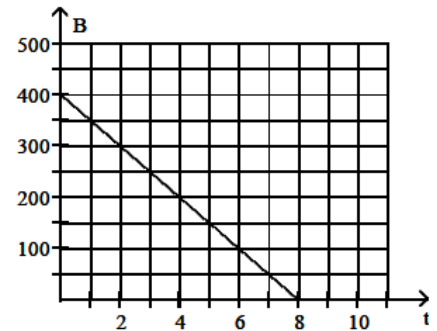
(Q25.) Gregory purchased a treadmill on a monthly installment plan. After t months, Gregory still owes a balance of B dollars. (See graph given) What does the **x-intercept** mean in the context of the problem?

(A) He pays $8 per month toward the balance

(B) He pays $50 per month toward the balance

(C) It will take him 50 months to pay off the balance

(D) It will take him 8 months to pay off the balance

(E) The treadmill costs $400

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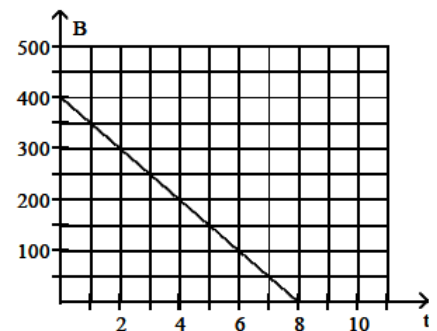
(Q26.) What is the **slope** of the line passing $(8, 3)$ and $(8, -3)$?

    (A) 0

    (B) 3

    (C) -3

    (D) 8

    (E) undefined
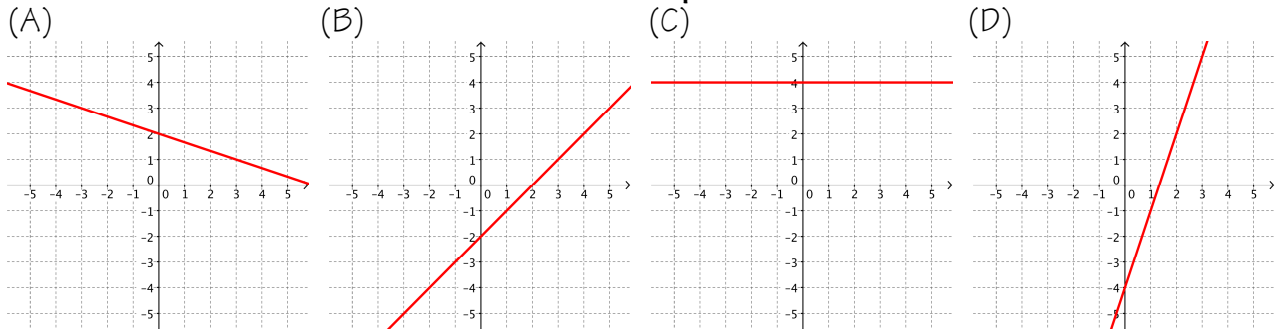
(Q27.) Write the equation $y - 3 = \frac{-1}{2}(x + 8)$ in the **slope-intercept form**

    (A) $\frac{1}{2}x + y = -13$

    (B) $y = \frac{-1}{2}x - 7$

    (C) $\frac{1}{2}x + y = -1$

    (D) $y = \frac{-1}{2}x - 1$

    (E) $y = -3x - 4$

(Q28.) Write the equation $\frac{x}{6} + \frac{y}{2} = 5$ in the **slope-intercept form**

    (A) $y = -3x + 10$

    (B) $y = -3x + \frac{5}{2}$

    (C) $y = \frac{-1}{3}x + \frac{5}{2}$

    (D) $y = \frac{-1}{3}x + 10$

    (E) $y = 2x - 10$

(Q29.) Which of the following line has the **smallest slope** value?

    (A)   (B)   (C)   (D)

(Q30.) Which of the following line has **positive y-intercept** and **positive slope**?

    (A)   (B)   (C)   (D)