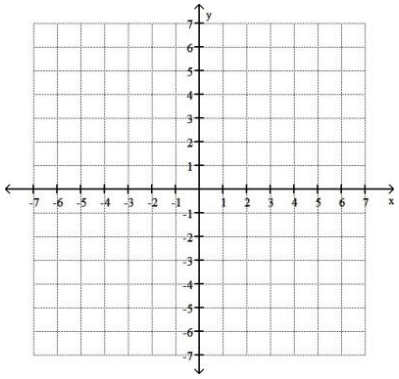
Math 1010 - Intermediate Algebra

Ch. 3 Slopes & Equations of Lines & Inequalities

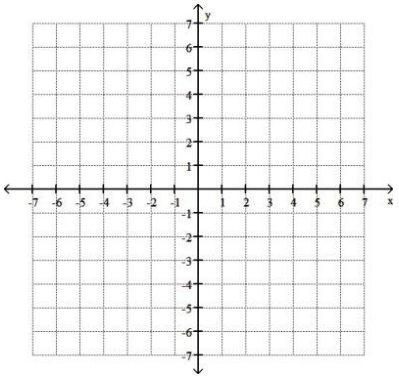
Name _____ Score_____

In 1-6, Find the slope, and the *x*- and *y*-intercepts of each line, if possible. Graph the line.

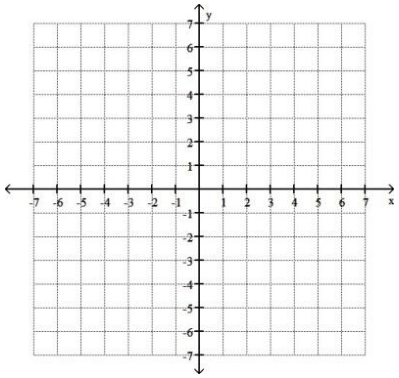
1. $3x+5y=9$



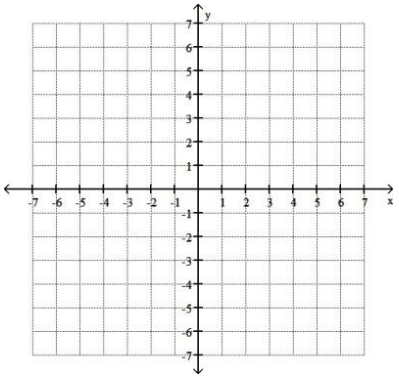
2. $4x+7y=14$



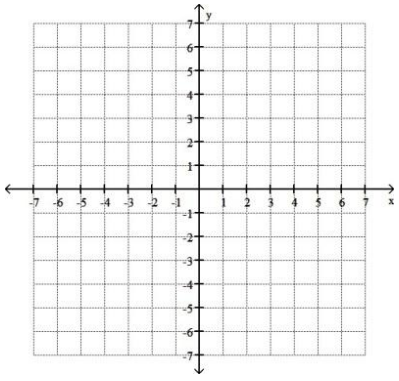
3. $y=2x-5$



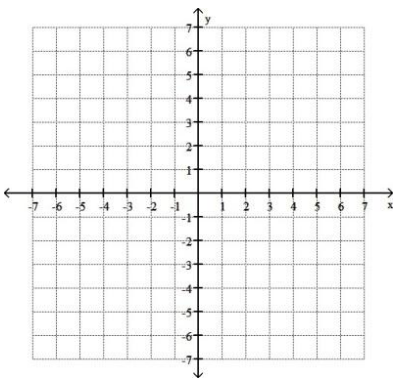
4. $5x-2y=4$



5. $x-4=0$



6. $y=0.5$



In 7-17, for each line described, write an equation of the line in slope-intercept form.

7. Through the points $(-2,6)$ and $(4,1)$.

8. Through the point $(-2,5)$ and parallel to the graph of $3x-y=4$.

9. Through the origin and perpendicular to the graph of $2x-5y=6$.

10. Through the point $(5,-8)$ and parallel to the graph of $y=4$.

11. Through the point $\left(\frac{3}{4},\frac{-7}{9}\right)$ and perpendicular to the graph of $x=\frac{2}{3}$.

12. Through the point $(4,-2)$ with slope –3.

13. Through the point $(-4,2)$ and parallel to the line through $(3,9)$ and $(6,11)$.

14. Through the point $(4,-2)$ and perpendicular to the line through $(3,7)$ and $(5,6)$.

15. Through the points $(4,-8)$ and $(-4,12)$.

16. Through the point $(-3,6)$ with slope $\frac{2}{3}$.

17. Through $(0,3)$ and the midpoint of the segment with endpoints $(2,8)$ and $(-4,12)$.

In 18-22, Match the description in with its equation.

18. Slope -0.5, $b=-2$.

19. x-intercept $(4,0)$, y-intercept $(0,2)$

20. Passes through $(4,-2)$ and $(0,0)$

21. $m=\frac{1}{2}$, passes through $(-2,-2)$

22. $m=\frac{1}{2}$, passes through the origin.

A. $y=-\frac{1}{2}x$

B. $y=-\frac{1}{2}x-2$

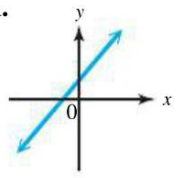
C. $x-2y=2$

D. $x+2y=4$

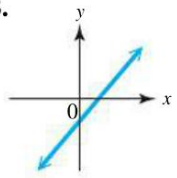
E. $x=2y$

23. Which line has a positive slope and negative y-coordinate for its y-intercept? 23._____

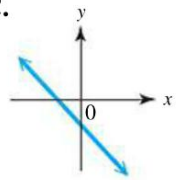
A.



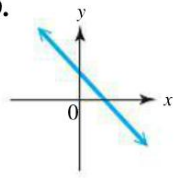
B.



C.



D.

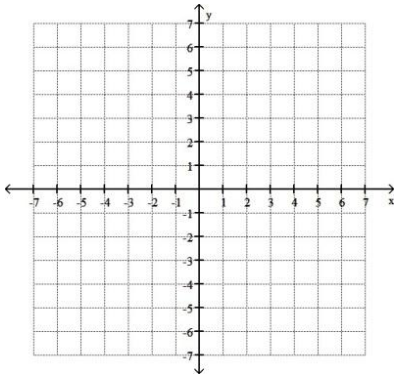


24. Which one of the following has as its graph a dashed boundary line and shading below the line? 24._____

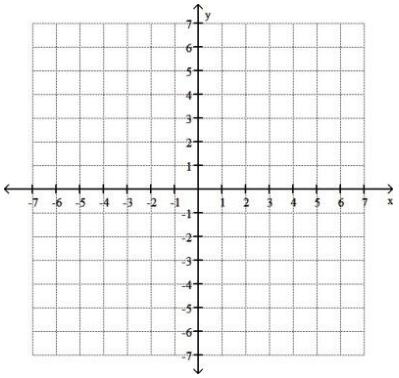
a) $y \geq 4x + 3$ b) $y > 4x + 3$ c) $y \leq 4x + 3$ d) $y < 4x + 3$

In 25-30, Graph the solution set of each inequality or compound inequality.

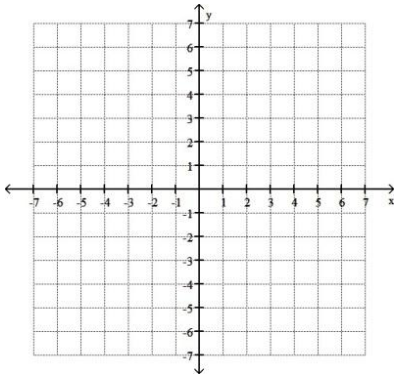
25. $3x - 2y \leq 12$



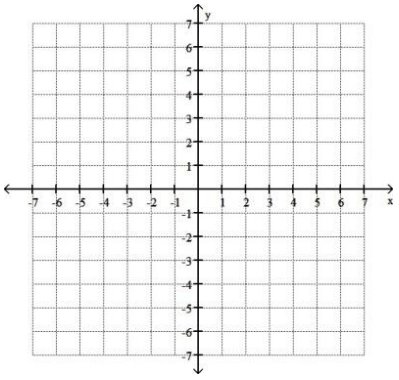
26. $5x - y > 6$



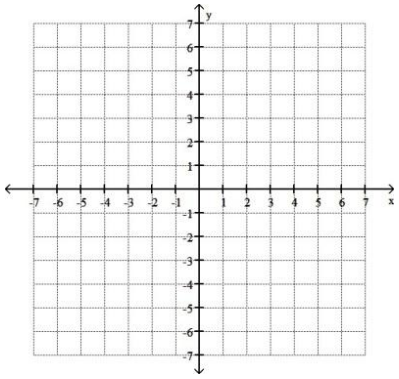
27. $2x + y \leq 1$ and $x \geq 2y$



28. $x \geq 2$ or $y \geq 2$



29. $|x + 1| > 2$



30. $|y - 3| < 2$