

MATH 107
Algebra Self Assessment

Answer all questions without a calculator. Leave all answers in most simple form.

1. In which quadrant does the point $(2, -6)$ lie?
2. Factor $(x^2 - 16)$ completely.
3. Solve $4(3x + 2) - (x + 5) = -3$.
4. $(2x^3y^2)^3$
5. $(x - 2)$ is a factor of which polynomial?
 - i) $x^2 - 4x + 4$
 - ii) $x^2 + x - 6$

a) i b) ii c) both d) neither
6. Evaluate $\frac{3x}{2y} \cdot \frac{8y^2}{27x} =$ Make sure your answer in most simple form.
7. $M - 9 = 1$ All of the following mean the same as the given equation except:
 - a) M is one more than nine
 - b) M is nine more than one
 - c) One is nine less than M
 - d) Nine is M less than one

8. Solve for x and y:

$$2x + y = 3$$

$$x - 3y = 12$$

9. Solve for x and y:

$$4x + 6y = 12$$

$$6x + 9y = 12$$

10. Factor completely: $8x^3 - 64$

11. $(9 - 7) - (7 - 9) =$

12. Evaluate: $(5\sqrt{3x})^2 =$

13. Simplify: $\frac{4x}{5} - \frac{2x}{3} + \frac{x}{2}$

14. If $x^2 + m - 6y^2 = (x + 3y)(x - 2y)$ then $m =$

15. Simplify: $\frac{3x^2 - 17x}{6x}$

16. Which is NOT between -1 and 1?

a) $-\frac{5}{6}$

b) $\frac{7}{8}$

c) $-\frac{9}{8}$

d) $-\frac{1}{2}$

17. Solve: $-4 + \frac{12}{3} =$

18. Solve. Leave your answer in most simple form: $\frac{3}{7} + \frac{1}{5} =$

19. Simplify: $\sqrt{x^2 + 4x + 4}$

20. Solve. Leave your answer in most simple form: $\frac{4}{9} \times \frac{18}{40} =$