

MTH 121**Review of Exam 1 Topics, for Exam 2
Spring 2013**

No calculators on these questions. (Assume any variables represent positive numbers.)

1. Use absolute value notation to describe the situation.

The distance between x and 5 is no more than 3.

2. Evaluate the expression for the given value of x .

$$x^2 - 3x + 4 \quad x = -2$$

3. Perform the operation and simplify: $\frac{5}{8} - \frac{5}{12} + \frac{1}{6}$

4. Perform the operation and simplify: $12 \div \frac{1}{4}$

5. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$\left(\frac{3u^2v^{-1}}{3^3u^{-1}v^3}\right)^{-2}$$

6. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$\frac{(2a^{-2}b^4)^3}{(10a^3b)^2}$$

7. The radicand is a perfect power. Find the specified root. $\sqrt{y^4w^6}$

8. The radicand is a perfect power. Find the specified root. $\sqrt[3]{\frac{216}{125}x^6}$

9. Simplify by removing perfect powers from the radicand. Leave the radical sign in your answer.
 $\sqrt[3]{-a^4y^8}$

10. Simplify by removing perfect powers from the radicand. Leave the radical sign in your answer.

$$\sqrt[4]{\frac{16a^2b^6}{81u^4v^5}}$$

11. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$a^{1/3}a^3$$

12. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$\left(\frac{25a^6}{49b^4}\right)^{3/2}$$

13. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$(a^3b^{4/3})^3$$

14. Put in simplest exponential form: (1) no radicals, and (2) positive exponents only.

$$\sqrt[3]{a}\sqrt[4]{a}$$

15. Multiply and simplify: $(4x^3 - 3)^2$

16. Multiply and simplify: $(-x^2 + x - 5)(3x^2 + 4x + 1)$

17. Factor completely: $20 - y - y^2$

18. Factor completely: $2x^3 - x^2 - 6x + 3$

19. Factor completely: $3x^2 - 11x - 20$

20. Factor completely: $(x^2 + 8)^2 - 36x^2$