

Name:

1. Consider the following numbers.

I. $\sqrt{20}$

II. $\sqrt{36}$

III. $2.\overline{33}$

Which of these numbers are *irrational*?

- a) I only b) II only c) III only d) II and III e) I and III

2. Consider the following numbers.

$$\pi, \sqrt{49}, 0.\overline{287}, \sqrt{\frac{9}{16}}, \sqrt{-25}, 3.14, -\sqrt{25}$$

How many of these numbers are *rational*?

- a) 1 b) 2 c) 3 d) 4 e) 5

3. Which of the following numbers is between $1.\overline{725}$ and $1.7\overline{26}$?

- a) $1.7\overline{21}$ b) 1.7235 c) $1.7\overline{242}$ d) 1.7253 e) 1.731

4. Consider the following list of numbers.

$$\frac{3}{5}, \frac{5}{9}, \frac{2}{3}, \frac{5}{8}, \frac{4}{7}$$

What is the smallest number in the list?

- a) $\frac{3}{5}$ b) $\frac{5}{9}$ c) $\frac{2}{3}$ d) $\frac{5}{8}$ e) $\frac{4}{7}$
-

5. Consider the following list of numbers.

$$0.409\overline{409}, 0.44\overline{4}, 0.4\overline{0}, 0.444, 0.42\overline{42}$$

When they are arranged from *smallest* to *largest*, which one will be the largest?

- a) $0.409\overline{409}$ b) $0.44\overline{4}$ c) $0.4\overline{0}$ d) 0.444 e) $0.42\overline{42}$
-

6. Rewrite $\frac{76}{125}$ in decimal form.

- a) 0.0608 b) 0.068 c) 0.608 d) 0.68 e) 1.64
-

7. What is the *lowest-terms* rational representation of $0.033\overline{3}$?

- a) $\frac{1}{300}$ b) $\frac{1}{90}$ c) $\frac{1}{30}$ d) $\frac{1}{15}$ e) $\frac{1}{11}$

8. $6 - 2 \times 3^2 + 24 \div 6 = \underline{\hspace{2cm}}$.

- a) -8 b) 10 c) 40 d) 28 e) 148

9. $1\frac{2}{3} \div -\frac{4}{5} \div -\frac{3}{4} = \underline{\hspace{2cm}}$

- a) $-\frac{25}{9}$ b) $\frac{9}{16}$ c) 1 d) $\frac{25}{16}$ e) $\frac{25}{9}$

10. Emily bought two-fifths of a ton of hay and three-fourths of a ton of oats to feed her animals. How many tons of feed did Emily purchase?

- a) $\frac{5}{9}$ ton b) 1 ton c) $1\frac{1}{10}$ tons d) $1\frac{1}{5}$ tons e) $1\frac{3}{20}$ tons

11. The towns of Aurora, Parker, and Franktown are located in a north/south straight line. Aurora is located $14\frac{3}{4}$ miles north of Parker and Franktown is located $10\frac{1}{3}$ miles south of Parker. How far apart are Aurora and Franktown?

- a) $4\frac{5}{12}$ miles b) $24\frac{4}{7}$ miles c) $25\frac{1}{12}$ miles
d) $25\frac{1}{2}$ miles e) 26 miles

12. Stuart is making a recipe that calls for three and one-half cups of flour, one and one-half cups of sugar, and one-eighth cup of baking powder. How many total cups of these three ingredients will Stuart use?
- a) $4\frac{1}{8}$ b) $5\frac{1}{8}$ c) $5\frac{1}{4}$ d) $5\frac{1}{2}$ e) $5\frac{3}{4}$
-

13. Jimmy cut $3\frac{1}{2}$ cords of firewood. He gave $1\frac{1}{4}$ cords to his grandparents and $1\frac{1}{3}$ cords to his sister. How many cords of firewood did he have left?
- a) $\frac{3}{4}$ b) $\frac{11}{12}$ c) $1\frac{1}{3}$ d) $1\frac{1}{2}$ e) $1\frac{3}{4}$
-

14. If a new car can go $21\frac{3}{10}$ miles on 1 gallon of gas, how far can it go on $\frac{1}{2}$ gallon of gas?
- a) $10\frac{1}{10}$ miles b) $10\frac{3}{20}$ miles c) $10\frac{7}{10}$ miles
d) $10\frac{13}{20}$ miles e) $10\frac{17}{20}$ miles
-

15. If $\frac{3}{4}$ cup of sugar is used in a recipe that serves 12 people, then how much sugar should be used in a recipe that serves 4 people?
- a) $\frac{1}{5}$ cup b) $\frac{1}{4}$ cup c) $\frac{1}{3}$ cup d) $\frac{1}{2}$ cup e) 1 cup

16. The parents of the members of a marching band are making uniforms for the band. If a shirt requires $2\frac{1}{4}$ yards of material and the pants require $2\frac{1}{2}$ yards of material, how much material must the parents buy in order to outfit all 24 members of the band?

- a) 114 yards b) 120 yards c) 124 yards d) 130 yards e) 136 yards

17. A computer manufacturer has 4 weeks to fill an order for 1,500 computers. The first week $\frac{1}{5}$ are made, the second week $\frac{1}{3}$ of the remainder are made, and the third week $\frac{2}{5}$ of the remainder are made. How many computers must be made the last week?

- a) 390 computers b) 400 computers c) 460 computers
d) 480 computers e) 500 computers

18. Evaluate: $(-3)^2$

- a) -9 b) -6 c) 6 d) 9 e) 18

19. Evaluate: $(-4)^3$

- a) -64 b) -12 c) $-\frac{1}{64}$ d) $\frac{1}{64}$ e) 64

20. Evaluate: -4^3

- a) 64 b) $\frac{1}{64}$ c) $-\frac{1}{64}$ d) -12 e) -64
-

21. Evaluate: $(-1)^{48} \times (-2)^5$

- a) -32 b) -10 c) 10 d) 32 e) 1536
-

22. Simplify: $(7^3)^4$

- a) 21^4 b) 7^7 c) 7^{12} d) 21^{12} e) 7^{81}
-

23. Find the value(s) of n that make $n^2 \times n^4 = 64$ true.

- a) -2 b) ± 2 c) 2 d) 8 e) $\frac{32}{3}$
-

24. Rewrite 5^{-2} using positive exponents only and evaluate the result.

- a) $\frac{1}{5^2} = \frac{1}{25}$ b) $-5^2 = -25$ c) $5^2 = 25$
d) $5^2 = 10$ e) $-2 \times 5^1 = -10$

25. Rewrite $\frac{5^{-3}}{4^7}$ with *positive* exponents.

- a) $\frac{4^7}{5^3}$ b) $5^3 \times 4^7$ c) $\frac{5^3}{4^7}$ d) 20^{10} e) $\frac{1}{5^3 \times 4^7}$
-

26. Evaluate: $(-2)^{-3}$

- a) $-\frac{1}{8}$ b) $\frac{1}{8}$ c) 4 d) 6 e) 8
-

27. Evaluate: $\left(\frac{2}{3}\right)^{-3}$

- a) $-\frac{8}{3}$ b) $-\frac{8}{27}$ c) $\frac{8}{27}$ d) $\frac{27}{8}$ e) $\frac{35}{6}$
-

28. Evaluate: $2^{-1} + 5^{-1}$

- a) -7 b) $-\frac{1}{7}$ c) $\frac{1}{7}$ d) $\frac{7}{10}$ e) $\frac{10}{7}$
-

29. Evaluate: $\frac{(6^{-1} + 4^{-1})^{-1}}{(3^{-1} + 2^{-1})^{-1}}$

- a) $\frac{3}{5}$ b) $\frac{7}{8}$ c) 2 d) 4 e) $\frac{72}{10}$

30. Consider the following numbers.

I. 5^{-3}

II. 3^{-2}

III. 4^{-2}

IV. 2^{-3}

V. 3^{-4}

These numbers are in the *wrong* order. When they are placed in the correct order from smallest to largest, which one will be the smallest?

a) I

b) II

c) III

d) IV

e) V

31. Simplify and rewrite using only positive exponents: $\left(\frac{3^{-2}}{4^{-1}}\right)^{-3}$

a) $\frac{3^3}{4^6}$

b) $\frac{3^6}{4^3}$

c) $\frac{4^3}{3^6}$

d) $\frac{2^3}{3^3}$

e) $\frac{4^6}{3^3}$

32. Evaluate: $\frac{(4^5 \times 4^{-2})^2}{4^4}$

a) $\frac{1}{16}$

b) $\frac{1}{4}$

c) 4

d) 8

e) 16

33. Evaluate: $\left(\frac{3^{-1}}{3^{-2}}\right)^{-3}$

- a) -9 b) $\frac{1}{36}$ c) $\frac{1}{27}$ d) 9 e) 27
-

34. Simplify: $(-2x^3y^{-4})^{-3}$

- a) $-\frac{1}{8}x^{-9}y^{12}$ b) $\frac{1}{8}x^{-9}y^{12}$ c) $6x^{-9}y^{12}$ d) $8x^0y^{-7}$ e) $8x^{-27}y^{64}$
-

35. Simplify and rewrite using only positive exponents: $\frac{(x^{-4})^5}{x^{-9}}$

- a) $\frac{x^{-20}}{x^{-9}}$ b) $\frac{1}{x^{11}}$ c) $\frac{x^9}{x^{20}}$ d) x^{10} e) x^{11}
-

36. Simplify and rewrite using only positive exponents: $\left(\frac{x^2}{y^3}\right)^{-2}$

- a) $\frac{x^4}{y^6}$ b) $\frac{y^6}{x^4}$ c) $\frac{1}{y^6}$ d) y^6 e) $\frac{y^3}{x^2}$

37. Simplify and rewrite using only positive exponents: $\left(\frac{4x^2}{(2y)^3}\right)^{-2}$

a) $\frac{-4y^6}{x^2}$

b) $\frac{x^4}{4y^6}$

c) $\frac{4y^6}{x^4}$

d) $\frac{1}{y^6}$

e) y^6

38. Simplify: $\frac{x^{12}}{x^{-2}}$

a) x^{-10}

b) x^{-6}

c) x^6

d) x^{14}

e) x^{24}

39. Simplify: $\frac{-16x^{-16}}{-4x^{-4}}$

a) $-20x^{-20}$

b) $-12x^{-12}$

c) $4x^{-20}$

d) $4x^{-12}$

e) $4x^4$

40. Simplify: $\frac{16x^{-16(2n-3)}}{-4x^{4(n-1)}}$

a) $-4x^{-36n+52}$

b) $-4x^{-8n-12}$

c) $-4x^{8n+52}$

d) $12x^{-36n+44}$

e) $20x^{-36n+52}$

41. Simplify: $\frac{-24x^{-24}y^{-12}}{4x^{-6}y^{-3}}$

a) $-6x^{-18}y^{-9}$

b) $-6x^4y^4$

c) $-6x^{-30}y^{-15}$

d) $-28x^{-18}y^{-9}$

e) $-6x^{18}y^9$

42. Simplify: $\frac{(-2ab^2)^4}{2(a^2b)^3}$

a) $-\frac{b^5}{a}$

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

c) $\frac{8b^5}{a^2}$

d) $\frac{2b^5}{a^2}$

e) $\frac{b^5}{a}$

43. Simplify: $2^5 \times 2^6 \times 2^2$

a) 2^1

b) 2^{13}

c) 8^{13}

d) 2^{60}

e) 6^{60}

44. Simplify: $\frac{8^{24}}{8^4}$

a) 1^6

b) 1^{20}

c) 8^6

d) 8^{18}

e) 8^{20}

Math 9 Review #1 Name: 6/12/2013

1.
Answer: a
CodePath: EAS.CM2.B.C.1

2.
Answer: e
CodePath: EAS.CM2.B.C.3

3.
Answer: d
CodePath: EAS.CM2.B.C.9

4.
Answer: b
CodePath: EAS.CM2.B.C.11

5.
Answer: b
CodePath: EAS.CM2.B.C.27

6.
Answer: c
CodePath: EAS.CM2.B.C.33

7.
Answer: c
CodePath: EAS.CM2.B.C.37

8.
Answer: a
CodePath: EAS.CM2.B.B.55

9.
Answer: e
CodePath: EAS.CM2.B.B.57

10.
Answer: e
CodePath: EAS.MMA.B.K.1

11.
Answer: c
CodePath: EAS.MMA.B.K.3

12.
Answer: b
CodePath: EAS.MMA.B.K.5

13.
Answer: b
CodePath: EAS.MMA.B.K.13

14.
Answer: d
CodePath: EAS.MMA.B.K.17

15.
Answer: b
CodePath: EAS.MMA.B.K.21

16.
Answer: a
CodePath: EAS.MMA.B.K.35

17.
Answer: d
CodePath: EAS.MMA.B.K.45

18.
Answer: d
CodePath: EAS.CM2.A.A.9

19.
Answer: a
CodePath: EAS.CM2.A.A.13

20.
Answer: e
CodePath: EAS.CM2.A.A.17

21.
Answer: a
CodePath: EAS.CM2.A.A.25

22.
Answer: c
CodePath: EAS.CM2.A.A.61

23.
Answer: b
CodePath: EAS.CM2.A.A.73

24.
Answer: a
CodePath: EAS.CM2.A.B.1

25.
Answer: e
CodePath: EAS.CM2.A.B.9

26.
Answer: a
CodePath: EAS.CM2.A.B.17

27.
Answer: d
CodePath: EAS.CM2.A.B.25

28.
Answer: d
CodePath: EAS.CM2.A.B.33

29.
Answer: c
CodePath: EAS.CM2.A.B.37

30.
Answer: a
CodePath: EAS.CM2.A.B.47

31.
Answer: b
CodePath: EAS.CM2.A.C.1

32.
Answer: e
CodePath: EAS.CM2.A.C.21

33.
Answer: c
CodePath: EAS.CM2.A.C.25

34.
Answer: a
CodePath: EAS.CM2.A.C.37

35.
Answer: b
CodePath: EAS.CM2.A.C.41

36.
Answer: b
CodePath: EAS.CM2.A.C.45

37.
Answer: c
CodePath: EAS.CM2.A.C.49

38.
Answer: d
CodePath: EAS.CM2.A.C.55

39.
Answer: d
CodePath: EAS.CM2.A.C.67

40.
Answer: a
CodePath: EAS.CM2.A.C.77

41.
Answer: a
CodePath: EAS.CM2.A.C.81

42.
Answer: c
CodePath: EAS.CM2.A.C.85

43.
Answer: b
CodePath: EAS.CM2.A.A.57

44.
Answer: e
CodePath: EAS.CM2.A.A.59

