

Name:

1-A Fractions

1. Reduce.

a) $\frac{30}{36}$

b) $\frac{960}{720}$

2. Write as a decimal.

a) 18%

b) 8%

c) 0.8%

3. Write as a fraction, and reduce.

a) 18%

b) 8%

c) 0.8%

4. Multiply the given number by $\frac{3}{4}$, and reduce.

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

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

c) 6

5. Divide the given number by $\frac{3}{4}$, and reduce.

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

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

c) 6

6. Subtract $\frac{3}{4}$ from the given number, and reduce.

a) $\frac{11}{4}$

b) $\frac{11}{3}$

c) 6

1-B Expressions

7. Let f represent the expression $5x^2 - \frac{2x}{3} + 3 + 4 \sin 2x - \sqrt{6}$.

a) List the terms of f .

b) Multiply f by 10.

8. Let g represent the expression $\frac{21x^5\sqrt{14x}}{21x^5 - 28x^2}$.

a) List the terms of the numerator.

b) List the terms of the denominator.

c) Simplify g .

d) Multiply g by 10.

9. Write each polynomial in standard form, classify it, and identify the leading coefficient.

a) $x^2 - 4x^3$

b) $-4x^3$

c) $2x + 10$

d) $9x - 4 + \frac{8x^2}{7}$

10. Write in scientific notation.

a) 24,000

b) .00240

c) 20^{24}

d) $(\frac{1}{4})^{24}$

1-C Solving Equations

11. Evaluate.

a) $5 + 10 \times 9$

b) $5 + 10(9)^2$

c) $5 + 10\sqrt{9}$

d) -9^2

e) $(-9)^2$

f) $\frac{10+15}{20+15}$

12. Solve for x . Show every step, including basic algebra. Round decimal answers to the nearest hundredth.

a) $x + 5 = 2(8x - 7)$

b) $3 = \frac{1}{4}(8x - 7)$

c) $11x^2 = 5$

1-D Properties of Exponents

13. Simplify, and write with no decimals or negative exponents.

a) a^6a^4

b) $(a^6)^4$

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

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

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

f) $(10a^6)^4$

g) $2(10a^6)^4$

h) $2a^4(10a^6)^4$

i) $2a^4(10a^6)^{-4}$

j) $2a^4b(10a^6b^3)^{-4}$

k) 5^{-1}

l) 5^{-2}

m) $(5a^5)^{-1}$

n) $(5a^5)^{-2}$

o) $3(5a^5)^{-2}$

p) $5a^{-1}$

q) $\left(\frac{5a^5}{12b^3}\right)^{-1}$

r) $\left(\frac{15a^5b^{-3}}{12a^{-3}b^3}\right)^{-1}$

s) $\left(\frac{15a^5b^{-3}}{12a^{-3}b^3}\right)^{-2}$

t) $2a\left(\frac{15a^5b^{-3}}{12a^{-3}b^3}\right)^{-2}$

1-E Addition, Subtraction, and Multiplication of Polynomials

14. Subtract.

a) $(x^3 + 2x) - (10x^2 - x)$

b) $(5x^2 - 9) - (x^3 - 20x^2 + x + 3)$

15. Multiply.

a) $(2x - 5)(4x - 6)$

b) $(2x - 5)(4x - 6)(x + 3)$

c) $(2x - 5)(2x + 5)$

d) $(2x - 5)^2$