

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)  $(2x - 5)^2$