

AMERICAN RIVER COLLEGE
ASSESSMENT CENTER

Math COMPASS TEST

SAMPLE ITEMS

These items are not actual items from COMPASS® but are similar in content and format. These items are presented for illustrative purposes and do not constitute a full representation of item content.

Numerical Skills/Pre-Algebra Placement

Averages: Means, Medians, and Modes

- 1 What is the average (arithmetic mean) of 8, 7, 7, 5, 3, 2, and 2?
- A. $3\frac{4}{7}$
B. $4\frac{6}{7}$
C. $4\frac{6}{7}$
D. $5\frac{4}{5}$
E. $6\frac{5}{5}$

Basic Operations with Decimals

- 2 Ben is making wooden toys for the next arts and crafts sale. Each toy costs Ben \$1.80 to make. If he sells the toys for \$3.00 each, how many will he have to sell to make a profit of exactly \$36.00?
- A. 12
B. 20
C. 30
D. 60
E. 108

Basic Operations with Fractions

- 3 How many yards of material from a 24-yard length of cloth remain after 3 pieces, each $3\frac{1}{2}$ yards long, and 5 pieces, each $2\frac{1}{4}$ yards long, are removed?
- A. $2\frac{1}{4}$
B. $4\frac{1}{4}$
C. $4\frac{5}{6}$
D. $10\frac{1}{4}$
E. $10\frac{5}{6}$

Percentages

- 4 Phillip charged \$400 worth of goods on his credit card. On his first bill, he was not charged any interest, and he made a payment of \$20. He then charged another \$18 worth of goods. On his second bill a month later, he was charged 2% interest on his entire unpaid balance. How much interest was Phillip charged on his second bill?
- A. \$8.76
B. \$7.96
C. \$7.60
D. \$7.24
E. \$6.63

Algebra Placement

Elementary Algebra: Linear Equations in One Variable

- 1 A student has earned scores of 87, 81, and 88 on the first 3 of 4 tests. If the student wants an average (arithmetic mean) of exactly 87, what score must she earn on the fourth test?
- A. 85
B. 86
C. 87
D. 92
E. 93

Elementary Algebra: Basic Operations with Polynomials

- 2 Which of the following expressions represents the product of 3 less than twice x and 2 more than the quantity 3 times x ?
- A. $-6x^2 + 25x + 6$
B. $6x^2 + 5x + 6$
C. $6x^2 - 5x + 6$
D. $6x^2 - 5x - 6$
E. $6x^2 - 13x - 6$

Elementary Algebra: Substituting Values into Algebraic Expressions

- 3 If $x = -1$ and $y = 2$, what is the value of the expression $2x^3 - 3xy$?
- A. 8
B. 4
C. -1
D. -4
E. -8

Intermediate Algebra: Rational Expressions

- 4 For all $r \neq \pm 2$, $\frac{r^2 - 5r + 6}{r^2 - 4} = ?$
- A. $\frac{r-3}{r+2}$
B. $\frac{r-2}{r+2}$
C. $\frac{r-2}{r+3}$
D. $\frac{r+3}{r-2}$
E. $\frac{r+3}{r+2}$

Coordinate Geometry: Linear Equations in Two Variables

- 5 What is the equation of the line that contains the points with (x,y) coordinates $(-3,7)$ and $(5,-1)$?
- A. $y = 3x - 2$
B. $y = x + 10$
C. $y = -\frac{1}{3}x + 8$
D. $y = -\frac{2}{3}x + \frac{11}{4}$
E. $y = -x + 4$

Answers: 1. C; 2. C; 3. A; 4. B

Answers: 1. D; 2. D; 3. B; 4. A; 5. E

Next Page 

College Algebra Placement

Complex Numbers

1 For $i = \sqrt{-1}$, if $3i(2 + 5i) = x + 6i$, then $x = ?$

- A. -15
- B. 5
- C. $5i$
- D. $15i$
- E. $27i$

Functions

2 If $f(4) = 0$ and $f(6) = 6$, which of the following could represent $f(x)$?

- A. $\frac{2}{3}x - 4$
- B. $x + 2$
- C. $x - 4$
- D. $\frac{3}{2}x + 6$
- E. $3x - 12$

Answers: 1. A; 2. E

Trigonometry Placement

Trigonometric Functions and Identities

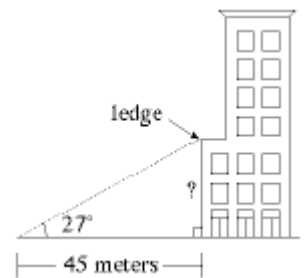
1 Which of the following is equivalent to $\frac{1 - \cos^2\theta}{\cos^2\theta}$?

- A. $\sec^2\theta$
- B. $(\csc^2\theta) - 1$
- C. $\tan^2\theta$
- D. $\sin^2\theta$
- E. $\frac{1}{\sin^2\theta}$

Right-Triangle Trigonometry

2 From a point on the ground the angle of elevation to a ledge on a building is 27° , and the distance to the base of the building is 45 meters. How many meters high is the ledge?

- A. $\frac{45}{\sin 27^\circ}$
- B. $\frac{45}{\tan 27^\circ}$
- C. $45 \sin 27^\circ$
- D. $45 \cos 27^\circ$
- E. $45 \tan 27^\circ$



Answers: 1. C; 2. E