

DO YOU HAVE THE SKILLS FOR BASIC ALGEBRA II?

SKILLS ASSESSMENT

**Simplify each expression.**

- 1)  $9 \cdot 2 + 7(7 - 6) + 1$   
 2)  $5 \cdot (2 + 2)^2 - 4 \cdot (6 - 4)^2$   
 3)  $8 \cdot 5 + \{18 \div [8 - (3 + 2)]\}$

- A) 48                      B) 45  
 C) 46                      D) 47

**Find the absolute value.**

4)  $|-7|$

- A) -7                      B) 7

**Add or subtract as indicated.**

5)  $21 + (-6) + 12 + (-19)$

- A) 8                      B) -16  
 C) 22                     D) 58

6)  $-8 - (-15)$

7)  $-17 - 13$

8)  $6 + (-32) - 41 - (-48) + (-14)$

- A) -33                    B) -101  
 C) -5                     D) -129

9) **Multiply:**  $2 \cdot (-4) \cdot 11 \cdot (-18)$

10) **Evaluate:**  $-7^2$

- A) 14                      B) -14  
 C) 49                      D) -49

11) **Divide:**  $-126 \div (-9)$

**Simplify, if possible.**

12)  $16 - |5 - 12^2|$

- A) -133                    B) 155  
 C) 9                        D) -123

13)  $\frac{-32 \cdot 40 \div 4^2}{16 \cdot 4 - 64}$

**Find each product or quotient. Simplify where necessary.**

14)  $\frac{-21}{30} \cdot \frac{5}{3}$

15)  $-\frac{5}{6} \div \left(-\frac{8}{9}\right)$

**Add or subtract as indicated. Simplify where necessary.**

16)  $-\frac{5}{8} + \left(-\frac{4}{5}\right)$

- A)  $-\frac{7}{40}$                       B)  $-\frac{57}{40}$   
 C)  $-\frac{57}{13}$                     D)  $-\frac{9}{13}$

17)  $\frac{3}{5} - \frac{4}{9}$

**Subtract. Write a mixed number for the answer.**

18)  $10 - 6\frac{4}{9}$

- A)  $4\frac{4}{9}$                       B)  $4\frac{5}{9}$   
 C)  $3\frac{5}{9}$                       D)  $5\frac{4}{9}$

**Divide. Write a mixed number for the answer.**

19)  $-48 \div 1\frac{1}{2}$

- A) -33                      B) -32  
C) -31                      D)  $-30\frac{1}{2}$

**Perform the indicated operations.**

20)  $3.369 - 5.15$

21)  $-2.88 (-5.8)$

22)  $897.12 \div 33.6$

- A) 26.7                      B) 27.7  
C) 2.67                      D) 267

**Simplify the expression.**

23)  $6 \cdot 0.5 + 1.1 \div 2 - 0.2^2$

- A) 1.81                      B) 6.61  
C) 10.71                      D) 3.51

**Evaluate the expression.**

24)  $\frac{6x-4y}{5}$  when  $x = -3$  and  $y = -2$

**Multiply.**

25)  $-8(9x - 2y + 8)$

**Collect like terms.**

26)  $10x - 7y + 13 - 17x - 2 - 4y$

27) **Simplify:**  $-5(2x - 7) - 4x + 6$

- A)  $-14x - 29$                       B)  $14x + 41$   
C)  $6x + 41$                       D)  $-14x + 41$

**Solve for x.**

28)  $-6x + 20 = 3x - 7$

**Solve each equation.**

29)  $-\frac{16}{45}y = -\frac{32}{35}$

- A)  $\frac{63}{8}$                       B)  $\frac{18}{7}$   
C)  $\frac{9}{14}$                       D)  $\frac{8}{63}$

30)  $17 - 8(x + 1) = 13 - 4(x + 5)$

31)  $f - \frac{5}{6}f - 4 = 1$

- A) 30                      B) -18  
C) 18                      D) -30

32)  $9.2y - 3.7y = 82.5$

**Translate to an algebraic equation.**

33) 9 more than 7 times a number

- A)  $9(7x)$                       B)  $7(x + 9)$   
C)  $7x + 9$                       D)  $9x + 7$

34) Which phrase represents a translation of the expression  $2(x + 5)$ ?

- A) Five more than twice a number  
B) The sum of twice a number and five  
C) Five added to twice a number  
D) Twice the sum of a number and five

**Solve each problem.**

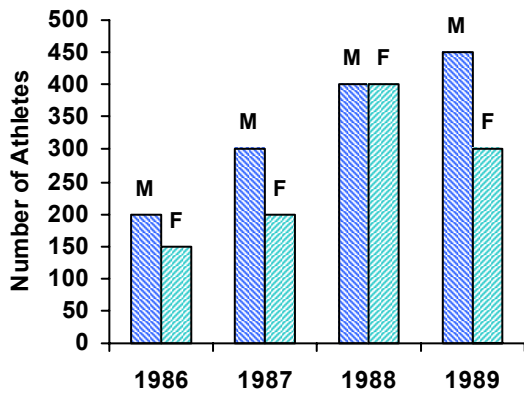
35) When 16 is subtracted from 4 times a number, the result is 184. Find the number.

36) The length of a rectangular lot is 7 meters more than the width. If the perimeter is 94 meters, what is the length of the lot?

- A) 20 meters                      B) 27 meters  
C) 54 meters                      D) 47 meters

37) A 30-ft rope is cut into two pieces so that the second piece is five times as long as the first piece. Find the length of each piece.

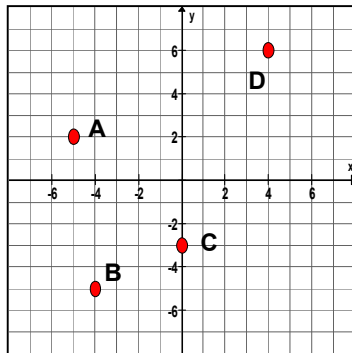
The double bar graph shows the number of male (M) and female (F) athletes at a university over a four-year period. Use this graph to solve the following problem.



38) Find the average number of female athletes for the 4-year period. Round to the nearest one.

Find the coordinates of the given points.

39)



Determine whether the ordered pair is a solution of the given equation.

40)  $(-2, 3)$ ;  $x + 2y = -2$

Solve the proportion.

41)  $\frac{35}{126} = \frac{10}{x}$

Use a proportion to solve the problem.

42) A label printer prints 9 pages of labels in 1.7 seconds. How long will it take to print 72 pages of labels?

Write the fraction as a percent.

43)  $\frac{6}{25}$

Find fraction notation and simplify.

44) 0.8%

A)  $\frac{2}{125}$

B)  $\frac{2}{25}$

C)  $\frac{1}{125}$

D)  $\frac{1}{250}$

Solve each problem.

45) 21 is 3% of what number?

46) 48 is what percent of 20?

A) 24%

B) 240%

C) 2.4%

D) 0.24%

47) A lab technician has 750 mL of a solution of water and acid. If 4% of the solution is acid, how many milliliters are acid?

48) On a biology test, Suzie got 25 questions correct but did not pass. On a second attempt, she got 36 questions correct. What was the percent increase?

A) 56%

B) 44%

C) 30.6%

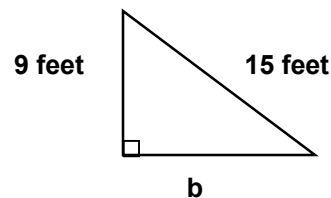
D) 11%

Find the square root.

49)  $\sqrt{196}$

Find the length of the third side of the right triangle.

50)



A) 12 feet

B) 11 feet

C) 14 feet

D) 15 feet

## Answer Key

- 1) 26
- 2) 64
- 3) C
- 4) B
- 5) A
- 6) 7
- 7) -30
- 8) A
- 9)  $1^{\cdot}584$
- 10) D
- 11) 14
- 12) D
- 13) Undefined
- 14)  $-\frac{7}{6}$
- 15)  $\frac{15}{16}$
- 16) B
- 17)  $\frac{7}{45}$
- 18) C
- 19) B
- 20) -1.781
- 21) 16.704
- 22) A
- 23) D
- 24) -2
- 25)  $-72x + 16y - 64$
- 26)  $-7x - 11y + 11$
- 27) D
- 28) 3
- 29) B
- 30) 4
- 31) A
- 32) 15
- 33) C
- 34) A
- 35) 50
- 36) B
- 37) B
- 38) 263 students
- 39) A: (-5, 2); B: (-4, -5); C: (0, -3); D: (4, 6)
- 40) Yes
- 41) 36
- 42) 13.6 seconds
- 43) 24%
- 44) C
- 45) 700
- 46) B
- 47) 30 mL
- 48) B
- 49) 14
- 50) A