

# FALL 2013 MATH 110/112 DEPARTMENT FINAL

DO NOT WRITE ON THIS EXAM. SCRATCH PAPER WILL BE PROVIDED.

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

**Simplify the expression.**

1)  $(-2)^3 - 18 \div (-2)$

A) -17

B) 17

C) -1

D) 1

1) \_\_\_\_\_

**Provide an appropriate response.**

2) Find the average of 83, 77, 69, 73, and 83.

A) 83

B) 76

C) 77

D) 69

2) \_\_\_\_\_

**Evaluate the expression for  $x = -2$ ,  $y = 3$ ,  $z = -4$ .**

3)  $13 - z^2$

A) -3

B) 21

C) 29

D) 104

3) \_\_\_\_\_

**Provide an appropriate response.**

4) Simplify:  $-5(3z + 2) - z - 11$

A)  $-14z - 21$

B)  $-14z + 1$

C)  $-16z - 21$

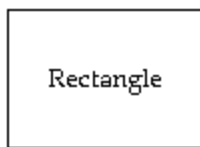
D)  $-16z + 21$

4) \_\_\_\_\_

5) Write an expression that represents the area of the rectangle. Simplify the expression.

5) \_\_\_\_\_

8 meters



(2x - 5) meters

A)  $(16x + 40)$  sq m

B)  $(10x - 40)$  sq m

C)  $(10x - 13)$  sq m

D)  $(16x - 40)$  sq m

**Solve the equation.**

6)  $\frac{x}{2} = -1 - (-8)$

A) 14

B) -14

C) 7

D) 18

6) \_\_\_\_\_

7)  $-2(x - 10) - 6 = 12 - 14$

A) -8

B) -14

C) 14

D) 8

7) \_\_\_\_\_

**Translate the phrase into a mathematical expression. If needed, use x to represent "a number."**

8) Five times a number, subtracted from -9.

A)  $-9 - 5x$

B)  $5x - (-9)$

C)  $5x - 9$

D)  $9 - 5x$

8) \_\_\_\_\_

**Translate the sentence into an equation. If needed, use x to represent "a number."**

9) Five added to three times a number equals -25.

A)  $3x + 25 = 5$

B)  $3(x + 5) = -25$

C)  $3x - 25 = 5$

D)  $3x + 5 = -25$

9) \_\_\_\_\_

**Perform the indicated operation and write the answer in simplest form.**

10)  $\frac{7a}{63} + \frac{2}{9}$

A)  $\frac{7a + 14}{9}$

B)  $\frac{7a + 14}{63}$

C)  $\frac{7 + 14a}{63}$

D)  $\frac{7a + 2}{63}$

10) \_\_\_\_\_

11)  $-\frac{1}{12} + \frac{5}{36} - \frac{1}{4}$

A)  $-\frac{5}{36}$

B)  $\frac{1}{12}$

C)  $\frac{7}{36}$

D)  $-\frac{7}{36}$

11) \_\_\_\_\_

12)  $17 - 8\frac{2}{9}$

A)  $16\frac{7}{9}$

B)  $9\frac{2}{9}$

C)  $8\frac{7}{9}$

D)  $9\frac{7}{9}$

12) \_\_\_\_\_

**Simplify the complex fraction.**

13)

$$\frac{6 - \frac{3}{5}}{1 - \frac{3}{4}}$$

A)  $\frac{132}{5}$

B)  $\frac{5}{108}$

C)  $\frac{108}{35}$

D)  $\frac{108}{5}$

13) \_\_\_\_\_

**Solve.**

14)  $\frac{5}{4}x = \frac{15}{16}$

A) 1

B)  $\frac{75}{64}$

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

D)  $-\frac{3}{4}$

14) \_\_\_\_\_

15)  $\frac{x}{9} - \frac{x}{8} = \frac{7}{9}$

15) \_\_\_\_\_

A)  $-\frac{1}{56}$

B)  $-56$

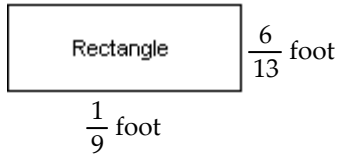
C)  $0$

D)  $-\frac{7}{9}$

Find the perimeter and area of the figure.

16)

16) \_\_\_\_\_



A) perimeter:  $1\frac{17}{117}$  in; area:  $\frac{2}{39}$  sq ft;

B) perimeter:  $\frac{67}{117}$  ft; area:  $\frac{3}{26}$  sq ft

C) perimeter:  $1\frac{17}{117}$  ft; area:  $\frac{1}{36}$  sq ft

D) perimeter:  $1\frac{17}{117}$  ft; area:  $\frac{2}{39}$  sq ft

Perform the indicated operation. Round the result to the nearest thousandth if necessary.

17)  $9.87 - 30.35$

17) \_\_\_\_\_

A)  $20.48$

B)  $-10.48$

C)  $-20.48$

D)  $40.22$

18)  $(-0.00804) \div (-0.52)$

18) \_\_\_\_\_

A)  $0.004$

B)  $64.677$

C)  $0.015$

D)  $-0.015$

Write the fraction as a decimal. If necessary, round to the nearest thousandth.

19)  $-\frac{13}{25}$

19) \_\_\_\_\_

A)  $-0.52$

B)  $-0.58$

C)  $-0.44$

D)  $-0.32$

Simplify.

20)  $(-0.4)^2 + 1.23$

20) \_\_\_\_\_

A)  $0.43$

B)  $-1.07$

C)  $1.39$

D)  $1.07$

21)  $2.8x - 3.5 - 1.6x - 9.8$

21) \_\_\_\_\_

A)  $4.4x - 34.3$

B)  $1.2x + 6.3$

C)  $1.2x - 13.3$

D)  $-12.1x$

22)  $0.3x + 1.6 = -0.5$

A) -2.1

B) 3.7

C) -0.63

D) -7

22) \_\_\_\_\_

23)  $3(x + 5.7) = 7x - 2.1$

A) 1.95

B) -19.2

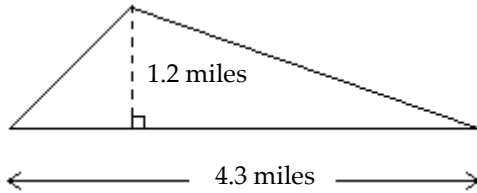
C) 23.2

D) 4.8

23) \_\_\_\_\_

**Solve.**

24) Find the area.



A) 516 sq mi

B) 2.58 sq mi

C) 51.6 sq mi

D) 0.516 sq mi

24) \_\_\_\_\_

**Write the ratio or rate as a fraction in simplest form.**

25) 600 cents to 760 cents

A)  $\frac{15}{19}$  cents

B)  $\frac{15}{19}$

C)  $\frac{15}{76}$

D)  $\frac{15}{76}$  cents

25) \_\_\_\_\_

26)  $7\frac{1}{6}$  to  $1\frac{2}{7}$

A)  $\frac{301}{54}$

B)  $\frac{54}{301}$

C)  $\frac{43}{9}$

D)  $\frac{86}{21}$

26) \_\_\_\_\_

**Find the unit rate.**

27) 1205 miles in 50 hours

A) 0.041 mi/hr

B) 24.1 mi/hr

C) 1155 mi/hr

D) 241 mi/hr

27) \_\_\_\_\_

**Solve the proportion for the given variable.**

28)  $\frac{0.9}{5} = \frac{1.8}{n}$

A) 9

B)  $1\frac{31}{50}$

C) 10

D)  $4\frac{1}{2}$

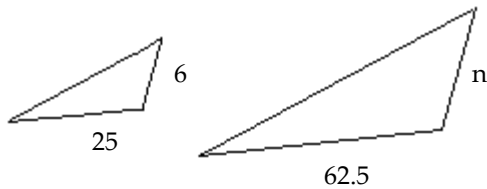
28) \_\_\_\_\_

**Solve.**

- 29) The standard dose of medicine for a dog is 5 grams for every 15 pounds of body weight. What is the standard dose for a dog that weighs 95 pounds? 29) \_\_\_\_\_

A)  $31\frac{1}{3}$  g      B)  $31\frac{2}{3}$  g      C) 32 g      D) 31 g

- 30) Given that the triangles above are similar, find the unknown length n. 30) \_\_\_\_\_



A) 150      B) 2.4      C) 0.24      D) 15

**Write the percent as a decimal.**

- 31) 0.5% 31) \_\_\_\_\_

A) 0.005      B) 0.5      C) 0.006      D) 0.05

**Write the percent as a fraction or a mixed number in simplest form.**

- 32) 87.5% 32) \_\_\_\_\_

A)  $87\frac{1}{2}$       B)  $87\frac{7}{8}$       C)  $\frac{7}{8}$       D)  $\frac{7}{9}$

**Write the fraction or mixed number as a percent.**

- 33)  $\frac{13}{16}$  33) \_\_\_\_\_

A) 84%      B) 82%      C) 81.25%      D) 84.25%

**Translate to an equation and solve.**

- 34) 17 is 4% of what number? 34) \_\_\_\_\_

A) 68      B) 4250      C) 42.5      D) 425

**Solve. If necessary, round percents to the nearest tenth, dollar amounts to the nearest cent, and all other numbers to the nearest whole.**

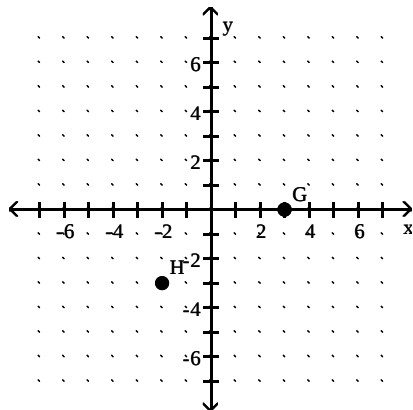
- 35) 24% of the lawyers in a firm are female. If there are 150 lawyers altogether, how many lawyers are female? 35) \_\_\_\_\_

A) 114 lawyers      B) 16 lawyers      C) 36 lawyers      D) 625 lawyers

Find the coordinates of the points in the graph.

36)

36) \_\_\_\_\_



A)  $G(3, 0)$ ;  $H(-3, -2)$

B)  $G(3, 0)$ ;  $H(-2, -3)$

C)  $G(0, 3)$ ;  $H(-2, -3)$

D)  $G(0, 3)$ ;  $H(-3, -2)$

Solve.

37) Nine times a number, added to  $-2$ , is  $43$ . Find the number.

A)  $-5$

B)  $45$

C)  $405$

D)  $5$

37) \_\_\_\_\_

Simplify.

38)  $\frac{-16}{-6 - 2}$

A)  $4$

B)  $2$

C)  $-2$

D)  $-4$

38) \_\_\_\_\_

39)  $-8^2 - 9^2$

A)  $145$

B)  $34$

C)  $-145$

D)  $-34$

39) \_\_\_\_\_

Add or subtract as indicated. Write the answer in simplest form.

40)  $7 - \frac{y}{12}$

A)  $\frac{12 - 7y}{12}$

B)  $\frac{84 - 7y}{12}$

C)  $\frac{7 - y}{12}$

D)  $\frac{84 - y}{12}$

40) \_\_\_\_\_

## Answer Key

Testname: F13M112DF

- 1) D
- 2) C
- 3) A
- 4) C
- 5) D
- 6) A
- 7) D
- 8) A
- 9) D
- 10) B
- 11) D
- 12) C
- 13) D
- 14) C
- 15) B
- 16) D
- 17) C
- 18) C
- 19) A
- 20) C
- 21) C
- 22) D
- 23) D
- 24) B
- 25) B
- 26) A
- 27) B
- 28) C
- 29) B
- 30) D
- 31) A
- 32) C
- 33) C
- 34) D
- 35) C
- 36) B
- 37) D
- 38) B
- 39) C
- 40) D