

Exam 2 - practice

Mth 85 Practice Exam 2 Franz Helfenstein NAME _____

For partial credit you must show your work. It must be neat and organized with answers simplified and boxed or circled. Round as indicated. Correct units must be included with all answers. (5 pts each)

1) Compute and write your answer to the nearest hundredth.

(a) $\frac{9.4 + \frac{4.5}{3.6}}{2.8 - \frac{8.2}{4.5}} \approx 10.89$	(b) $\frac{\sqrt{126} - 5}{2\pi} \approx 0.99$	(c) $10 - 5 4^2 - 3^3 = -45$	(d) $\sqrt{(\pi + 1)\pi + 1} \approx 3.74$	(e) $\frac{3.2 \times 10^3}{4.8 \times 10^2} \approx 6.67$
---	--	-------------------------------	--	--

2) Write your answer as a mixed number or proper fraction.

(a) $\frac{5}{8} + \frac{3}{4} = 1\frac{3}{8}$	(b) $\frac{5}{8} \div \frac{3}{4} = \frac{5}{6}$	(c) $1\frac{1}{4} - 3\frac{7}{8} = -2\frac{5}{8}$	(d) $4\frac{5}{8} \times 2\frac{1}{2} = 11\frac{9}{16}$	(e) $(1\frac{3}{8})^2 = 1\frac{57}{64}$
--	--	---	---	---

3) Fill in the blanks with an equivalent and appropriate form:

- (a) 75 centimeters = 0.75 meters (b) 200 milligrams = 0.2 grams
 (c) 10^6 meters = 1,000 kilometers (d) 50 kilowatts = 50,000 watts
 (e) 2.3 Megajoules = 2,300,000 Joules

4) Write using scientific notation:

- (a) 25 billion 2.5×10^{10} (b) 0.00375 3.75×10^{-3} (c) 25 thousandths 2.5×10^{-2}

Write as a decimal number: (d) 5.4×10^{-2} 0.054 (e) 2×10^3 2000

5) (a) Round to nearest whole 64^{ths} : 0.4219 (b) Write 7.484 feet as 7 ft $\frac{5}{16}$ in

$$\frac{27}{64}$$

(c) Simplify $\frac{15' 10 \frac{7}{8}''}{5}$ to 3 ft $2 \frac{3}{16}$ in

6) Compute the results of these common geometry formulas. Round to nearest tenth.

(a) $A^2 + B^2 = C^2$. Find C when A = 28 cm, B = 32 cm include units as needed! 42.5 cm

(b) $B = \frac{D}{\sqrt{1+m^2}}$. Find B when D = 50 ft, m = 35% include units as needed! 16.5 ft

(c) $m = \frac{y_2 - y_1}{x_2 - x_1}$. Find m when $y_1 = 15.7''$, $y_2 = 19.3''$, $x_1 = 15.6''$, $x_2 = 9.2''$. include units as needed! $-\frac{9}{16}$ or -0.5625

Use: 5,280 ft = 1 mile 2.54 cm = 1 inch Round your answers to 8 & 9 to a whole numbers

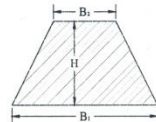
7) 187.5 cm = 6 ft $\frac{7}{8}$ in

8) 10^6 cubic inches = ? cubic feet $\approx 579 \text{ ft}^3$

9) 1,000 fps = ? mph $\approx 682 \text{ mph}$

10) How many sq-ft are enclosed by the trapezoid:
 $B_1 = 92' 7''$, $B_2 = 117' 10''$, $H = 75' 2''$

$7,908.16 \text{ ft}^2$



- 11) An old fuel pump is tested and found to pump 2.3 L/min when it should pump 2.5 L/min.
 (a) What is the absolute error? $-0.2 \frac{\text{L}}{\text{min}}$ (b) What is the relative error? -8%

- 12) Find the missing side. Round your answer to the nearest hundredth.



- 13) The weight removed from a steel plate is directly proportional to the area cut out. Four 4" holes are drilled through a 18" x 14" steel plate weighing 115 lbs. Round all answers to the nearest tenth.

(a) What amount (sq-in) of area is removed? **50.27 sq-in**

(b) What amount of weight (lb) is removed? **22.94 lbs**

(c) What percentage of weight is removed? **19.9%**

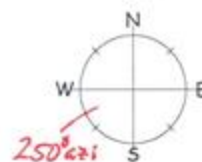
- 14) **Standard Angle, Bearing and Azimuth**

(a) Mark 250° azi on the compass shown here. Convert 250° azi to its

(b) negative θ -angle -160° , (c) to its bearing **S 70° W**

Convert the bearing **N 45° W** to its equivalent

(d) positive θ -angle 135° (e) back bearing **S 45° E**

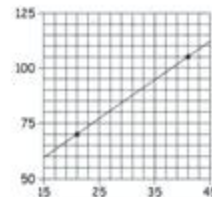


- 15) (a) Use the indicated points to find the slope of this line as a fraction.

Note: scales are unequal $\frac{35}{20}$ or $\frac{7}{4}$

(b) Convert a slope of $1/13$ to its %-grade to the nearest tenth %. **7.7%**

(c) Convert a grade of 19% to its pitch (e.g. $x/12$) to the nearest tenth. **2.3/12**



You must show your work for credit. The answer alone is insufficient.

16) Solve for H: $3(2H - 7) = 2H + 11$

$H = 8$

17) Solve for x: $1.7 + 2.4x = 2.5(3.6x + 1.8)$

$x = -\frac{14}{33}$ or -0.42

18) Solve for x: $y = \sqrt{mx + b}$

$x = (y^2 - b)/m$

19) Solve for a: $a^2 + b^2 = 7 + x$

$a = \pm \sqrt{7 + x - b^2}$

- 20) How many cubic feet are in each traffic divider as shown?

56.22 ft³

BONUS QUESTIONS

How many sq-cm are enclosed by this shape to the nearest tenth?



A = 46.1 cm²

