Mth 85 Exam 1 Franz Helfenstein NAME

Your work must be **clearly legible** with answers **simplified** and **boxed** in for full credit. For partial credit show your work/intermediate steps. Units required where applicable. 100 points

| True | e/Fals | e: Cir | rcle T | (true) if always | s true | other | wise cir | rcle F | ⁼ (fa | lse). | (<u>‡</u> pts | ea) | |
|------|---------|---------------------|-----------------------------|--------------------------------------|---------|-------------------|---|----------|-------------------|-------|----------------|-----------------------|--|
| 1) | (a) | Т | F | 10 ¹² = 10 trilli | on | | | (| (f) | Т | F | x ₂ = x | < ² |
| | (b) | Т | F | $8\frac{3}{4}'' = (8 + \frac{3}{4})$ | /12 ft | | | (| (g) | т | F | <u>7 + 5</u> 6 | = 7+ 5/6 |
| | (c) | т | F | 3(4 + 5) = 3[4 | + 5] | | | (| (h) | т | F | 2{ 2 + | + 2[2 + (2)(2)] } = 28 |
| | (d) | Т | F | 6 ³ = 666 | | | | (| (i) | Т | F | π > 3. | 14 |
| | (e) | Т | F | 9/25 = 36% | | | | (| (j) | Т | F | $\frac{3^2}{4} - 2^3$ | 2 = 0 |
| Ord | er of (| Operc | ations: | Simplify to an | integ | er or | a reduc | ed fr | racti | on. V | Vrite ir | nprope | er fractions as mixed numbers. |
| 2) | (a) | 8 × 3 | 20 - 10 |) × 5 = | | | (۲ | o) (| 60 - | 10(9 | - 17)5 | - 12 = | |
| | (c) | <u>(-2)</u> 12 + |) <u>(3)(-4</u> · (4)(-3 | <u>)</u> = | | (d) | <u>8 - 6 ×</u> 5 - 4 × | 3 5 = | | | | (e) | $\sqrt{3(11-5)4+9} =$ |
| Abs | olute \ | /alues | s: Sim | plify to an inte | ger or | ' a re | duced fr | ractio | on. V | Vrite | improj | per fro | actions as mixed numbers. |
| 3) | (a) | -6 | 5 = | | (b) | 3 | 8 - 57 | = | | | (c) | 60 - 3 | 20 7 - 13 = |
| Exp | onents | :: Sin | nplify t | o an integer or | r a rec | duced | fractio | n. W | 'rite | impro | oper fr | action | s as mixed numbers. |
| 4) | (a) | 4 ³ : | = | | (b) | -6² | = | | | | | (c) | $\frac{\binom{2}{3}^{2}}{2^{3}-3^{2}} =$ |
| | (d) | 176 | 39874 | 25598 ⁰ = | | | (4 | e) 7 | 7 ⁻² = | : | | | |
| Frad | tions: | Sim | plify to | o an integer or | a red | uced [.] | fraction | . Wr | rite i | mpro | per fro | ictions | as mixed numbers. |
| 5) | (a) | 1 1 - | · 3 ⁵ /8 = | | (b) | 4 ½ | ² / ₃ × 2 ² / ₃ | = | | | | (c) | $\frac{250}{1.\%}$ = |
| | (d) | [8 § |] ² = | | (e) | √(• | 12)(12 5/8 · | + 2 1/2 |) = | | | | |
| Scie | ntific | Nota | tion | | | | | | | | | | |
| 6) | Conv | vert to | o a dec | imal number: | (a) 1.7 | 7 × 10 | 4 = | | | | | (b) | 6.2 × 10 ⁻³ = |
| | Conv | vert to | o scier | tific notation: | (c) 12 | 2,300 | ,000 = _ | | | | | (d) | 0.00075 = |
| | (e) 4 | 420 n | nillion | people live in N | orth A | Ameri | ca. Wri | ite th | nat n | umbe | r in sci | entific | c notation. |

| Calc | ulator | · Use: Simpl | lify and | d round to | a sing | gle number | r accur | ate to the | hundredt | hs place (#.; | ##). | |
|------|---------|---|------------------|-------------------------|--------------------|--------------------------------------|----------------------|-------------------------|-----------------------|---|------------------------|--------------------------------|
| 7) | (a) | <u>26 + 84</u> (4.8)(3.8) | ~ | | (b) | $\frac{26.7 + 11.}{\sqrt{4.3} - 4.}$ | . <u>5</u> 3 ≈ | | (c) | $\frac{\sqrt{86} + 14}{7.2\sqrt{2.56}}$ | ~ | |
| | (d) | $\frac{2\frac{3}{8}+8\frac{3}{4}}{(4\frac{2}{3})\pi}$ | ~ | | | | (e) | √(5.2 - 3 | 3.4)96 - 5 | 4 ≈ | | |
| Rou | nding | Problems: S | implify | / to one de | ecimal | number r | ounded | according | g to our c | class rules. | | |
| 8) | (a) | 52,868 + 1 | 10,611 | + <u>10,5</u> 00 ≈ | 1 | | (circle | the most | correct a | inswer) | | |
| | A) | 73979 | | B) <u>7398</u> 0 | 0 | C) | <u>740</u> 00 |) | D) <u>74</u> 0 | 000 | E) | None of these |
| | (b) | 106.657 × | 125 × | 1.875 ≈ | | | (circle | the most | correct a | inswer) | | |
| | A) | 24997.7 | | B) 24998 | 8 | C) | <u>250</u> 00 | ס | D) <u>25</u> 0 | 000 | E) | None of these |
| | (c) | <u>2.4 × 1.6</u> 5.3 × 9.5 | * | | | | (d) | 11.48 + 3 | .16 - 4.5 | ~ | | |
| | (e) | A rectang measuring | ular wa those | arehouse f dimension | loor i: Is so t | s approxin hat the <u>re</u> | nately 6 esulting | 0 ft × 90 area is ac | ft. What curate to | accuracy sho the <u>nearest</u> | ould b <u>squar</u> | e used when <u>e foot</u> ? |
| | | Place O's i | in the i | required sl | lots. | 60 | | ft × 9 | 90 | | ft | |
| Wor | 'King v | with Measur | ements | s Correct | units | required | n answ | er. | | 7 | | |
| | | | | | | | | | _ | | | |
| | Rou | nd each mea | surem | ent to fee [.] | t-inch | ies with th | ne inche | es to the n | earest 16 | th inch. | | |
| | (d) | 937.6982 ir | າ≈ | ft | | <u>– 16</u> in | | | | | | |
| | (e) | A 37' 9 ┋" b | oar is c | cut into 3 e | equal | pieces. Gi | ve the | length of e | each piece | e to the near in | est 16 | b th inch. |
| Abb | reviat | tions and Pre | efixes | | | | | · | | 16 ^{III} | | |
| 10) | Wri | te in an alte | rnative | e form as i | indica | ted. Rema | ove the | oriainal M | . 6. с. ц. | | | |
| - / | (a) | 7 ½ Mb = | | | | <u>b</u> | (b) 55 | thousand | ths cm= _ | | | mm |
| | (c) | 400 Gw = | | | | w | (d) 75 | iμg = | | | | mg |
| | (e) | $\frac{5.2 \text{ Gv}}{1.3 \text{ Msec}} =$ | | | | v/sec | | | | | | |

| 11) | (a) | A new 600 megawatt | power plant is to be built. (| 600 megawatts = | (circle the correct answer) |
|-----|-----|------------------------|--------------------------------|--------------------------|-----------------------------|
| | A) | 6 billion watts | B) 6 × 10 ⁶ watts | C) 600 million watts | D) None of these |
| | (b) | A 200 mg once-a-weel | k allergy pill has just been f | FDA approved. 200 mg = | : |
| | A) | 0.2 grams | B) 2 × 10 ³ grams | C) 2 thousand grams | D) None of these |
| | (c) | A 0.23µv setting must | be made on a dial that only | y has mv. What setting s | should be used? |
| | A) | 230 mv | B) 0.00023 mv | C) 0.023 mv | D) None of these |
| | (d) | A storage device has ! | 5,500,000,000 KB. This is | equivalent to: | |
| | A) | 5.5 GB | B) 5.5 × 10 ³ MB | C) 5,500 GB | D) None of these |
| | | | | | |

(e) There are about 8 billion people in the world. Assume each person (on average) is responsible for the consumption of 20 gallons of oil <u>per month</u>. How much total oil is consumed <u>per year</u>? Write your answer in <u>scientific notation</u>.

| Use | 5,280 ft = 1 mi | 7.48 gal = 1 ft ³ | 2.54 cm = 1 in | 1.61 km = 1 mi | |
|-----|-----------------|------------------------------|----------------|----------------|--|
| | | Round to a who | ole number | | |

- 12) 0.1752 mi \rightarrow ft
- 13) mach 2 = 2200 ft/sec \rightarrow mph
- 14) 5 million gpm \rightarrow cfs
- 15) 54,000 sq-in \rightarrow sq-ft
- 16) What is the area (as sq-ft) of the trapezoid shown?
 B₁ = 22' 8", B₂ = 15' 4", H = 18' 7"



Direct Proportions

18) (a) Solve for x:

 $\frac{32}{15} = \frac{x}{70}$

(b) Solve for x:

$$\frac{18.3}{1.5} = \frac{400}{x}$$

| 17) | A circle has a 3' ! (a) Give the <u>Arec</u> | 5" radius. <u>a</u> to the nearest <u>tenth sq-f</u> | t. (b) Give the <u>Circumference</u> | to the nearest <u>inch</u> . |
|------|---|---|--------------------------------------|------------------------------|
| | (c) A triangle has | s sides 28, 45, 53. Use <u>He</u> | eron's formula to find its area. | |
| | A box is 18" × 23' | " \times 50". Give the volume in | cu-in and cu-ft. | |
| | (d) cu-in: | | (e) cu-ft: | _ |
| Grap | hs and their Inter | pretation: | | |
| 19a) | Write down the c | coordinates of the three po | pints: | |
| | A = | B = | <i>C</i> = | C |
| 19b) | Plot and label : | | | |
| | P = (7, -7) | Q = (0, 8) | | |

- 20) The CDC (Center for Disease Control) conducted a study of a new antiviral treatment. Both groups were infected at the same time. H1D5 patients received the treatment and H2F2 patients did not receive the treatment. Based on the graph shown, briefly answer the following questions USING EVERYDAY LANGUAGE PERTAINING TO A PERSON'S HEALTH. Your answer must clearly demonstrate that you have interpreted the graph correctly.
 - Virus/cc (a) What occurred at point (a)? 1500 H1D5 - - -H2F2 (b) On what day are H2F2 patients sickest? (b) 1000 (c) What occurred during section (c)? 500 (d) What occurred at point(d) (a) 15 20 days
 - (e) What was the overall outcome of the treatment vs. no treatment?

BONUS (5 points)

A rectangular pool is 50 yds × 42' 7 $\frac{1}{2}$ " × 8' 6 $\frac{7}{8}$ ". How many <u>gallons</u> of water will that hold?

Virus Count vs Time

Mth 85 Exam 1 Franz Helfenstein NAME

Your work must be **clearly legible** with answers **simplified** and **boxed** in for full credit. For partial credit show your work/intermediate steps. Units required where applicable. 100 points

| True | e/False: Circle T (true) if always true otherwise circle F (false). $(\frac{1}{2}p)$ | ts ea) |
|------|---|---|
| 1) | (a) T (F) $10^{12} = 10$ trillion (f) T (F) | $x_2 = x^2$ |
| | (b) (T) F $8\frac{3}{4} = 8 + 3/4$ (g) T (F) | $7+5/6 = \frac{7+5}{6}$ |
| | (c) T F 3(4+5) = 3[4+5] (h) T F | 2{ 2 + 2[2 + (2)(2)] } = 28 |
| | (d) T (F) $6^3 = 666$ (i) (T) F | π > 3.14 |
| | (e) T F $9/25 = 36\%$ (j) T F | $\frac{3^2 - 9}{4 - 2^2} = 0$ |
| Ord | er of Operations: Simplify to an integer or a reduced fraction. Write | e improper fractions as mixed numbers. |
| 2) | (a) $8 \times 20 - 10 \times 5 = 10$ (b) $60 - 10(9 - 17)$ |)5 - 12 = 448 |
| | | |
| | (2)(3)(4) 1.6 1 8-6×3-10 7/ | |
| | (c) $\frac{(-2)(3)(-4)}{12 + (4)(-3)} = undefined$ (d) $\frac{3-3}{5-4\times5} = \frac{10}{-15} = 73$ | (e) $\sqrt{3(11-5)4+9} = \sqrt{81} = 9$ |
| | | |
| | | |
| bse | olute Values: Simplify to an integer or a reduced fraction. Write imp | roper fractions as mixed numbers. |
|) | (a) $ -65 = 65$ (b) $ 38-57 = 19$ (c) |) 60 - 20 7 - 13 = - 60 |
| | | |
| Expo | onents: Simplify to an integer or a reduced fraction. Write improper | fractions as mixed numbers. |
| 1) | (a) $4^3 = 6^4$ (b) $-6^2 = -3^6$ | (c) $\frac{\binom{2}{3}^2}{2^3-3^2} = -\frac{4}{q}$ |
| | (d) 1763987425598° = 1 (e) $7^{-2} = \frac{1}{49}$ | |
| Frad | ctions: Simplify to an integer or a reduced fraction. Write improper | fractions as mixed numbers. |
| 5) | (a) $1\frac{1}{4} - 3\frac{5}{8} = -\frac{7}{3}\frac{3}{8}$ (b) $4\frac{1}{3} \times 2\frac{3}{3} = \frac{5}{9}$ | (c) $\frac{250}{1\frac{7}{8}} = 133\frac{1}{3}$ |
| | (d) $[8\frac{5}{8}]^2 = 74\frac{15}{64}$ (e) $\sqrt{(\frac{1}{2})(12\frac{5}{8}+2\frac{1}{2})} = 234$ | |
| | | |
| Scie | entific Notation | " |
| 5) | Convert to a decimal number: (a) $1.7 \times 10^{+} = 17000$ | (b) $6.2 \times 10^{\circ} = 0.006 \lambda$ |
| | Convert to scientific notation: (c) 12,300,000 = $\frac{1.23 \times 10}{100}$ | (d) $0.00070 = -7.0 \times 10^{-10}$ |
| | (e) 420 million people live in North America. Write that number in | scientific notation. |
| | 42×10° people | |

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| 7) | (a) | <u>26 + 84</u> (4.8)(3.8) | ≈ 6.03 | (b) | $\frac{26.7 + 11.9}{\sqrt{4.3} - 4.3}$ | 5 3 ≈-17,16 | ? (c) | $\frac{\sqrt{86} + 14}{7.2\sqrt{2.56}}$ | ≈ 2,02 | |
|---------------------------------------|--|--|---|--|---|--|--|--|--|---------|
| | (d) | $\frac{2\frac{3}{8}+8\frac{3}{4}}{(4\frac{2}{3})\pi}$ | ≈ 0,76 | | | (e) $\sqrt{(5.3)}$ | 2 - 3.4)96 - 54 | ≈ 10.9 | 0 | |
| Sou | nding F | Problems: S | implify to on | e decima | l number ro | ounded accor | ding to our c | ass rules. | | |
| 3) | (a) | 52,868 + 1 | 0,611 + <u>10,5</u> 0 | 0 ≈ | _ | (circle the m | ost correct ar | nswer) | | |
| | A) | 73979 | B) <u>73</u> | <u>898</u> 0 | (C) | 74000 | D) <u>74</u> 0 | 00 | E) None o | f these |
| | (b) | 106.657 × | 125 × 1.875 | × | | (circle the m | ost correct a | nswer) | | |
| | A) | 24997.7 | B) 24 | 1998 | (C) | 25000 | D) <u>25</u> 0 | 00 | E) None o | f these |
| | (c) | 2.4 × 1.6 5.3 × 9.5 | ≈ 0.076 | | | (d) 11.48 | + 3.16 - 4.5 # | 10.1 | | |
| | (e) | A rectang measuring | ılar warehou: those dimen | se floor i sions so t | s approxim that the <u>re</u> | ately 60 ft × sulting area | 90 ft. What s accurate to | accuracy sh the <u>neares</u> t | nould be used v t square foot? | when |
| | | Place O's i | n the require | d slots. | 60. <u>0</u> 0 | f | t × 90. 0 C | | _1 | - |
| | | | | | | | | | | |
| Nor ?) | rking v (a) | vith Measur Convert 737 | ements <i>Corr</i> " to ft-in | <i>ect units</i> (b) | <i>required i</i> Convert 1 | <i>in answer. (6</i> 7' 5" to ##. 1 | (90) = 5 ## ft (c) Co | 900 Invert 7' 7 | | ft |
| Woı €) | rking v (a) | vith Measur Convert 737 | ements <u>Corr</u> " to ft-in 5 " | <i>ect units</i> (b) | required i Convert 1 | in answer. (6 7' 5" to ##.# | 50) (90) = 5 ## ft (c) Co | 400 invert 7' 7 | | ft |
| Wor 9) | rking v (a) | vith Measure Convert 737 | ements <u>Corr</u> " to ft-in <u>5</u> " | (b) | Convert 1 Convert 1 | n answer. (6 7' 5" to ##.# , 42 ' | 50) (90) = 5 ## ft (c) Co | 7.65 | | ft |
| Wor 9) | rking v (a) Rour | vith Measur Convert 737 <u>61</u> nd each mea | ements <u>Corr</u> 7" to ft-in <u>5</u> " surement to | (b) | required i Convert 1 17 nes with th | <u>in answer. (6</u> 7' 5" to ##. 1 , 42 ' e inches to t | <u>50) (90) = 5</u> ## ft (c) Co he nearest 16 | 400 Invert 7' 7 7.65 | | ft |
| Wor 9) | rking v (a) Rour (d) | vith Measur Convert 737 <u>61</u> nd each mea 937.6982 ir | ements <u>Corr</u> 7" to ft-in 5" surement to 1≈ <u>78</u> f | feet-incl | $\frac{required i}{Convert 1}$ $\frac{17}{17}$ Thes with the $\frac{11}{16}$ in | <u>in answer.</u> (6 7' 5" to ##.# . <u>, 42 '</u> e inches to t | 50) (90) = 5 ## ft (c) Co he nearest 16 | 400 invert 7' 7 7.65 | | ft |
| Wor 9) | rking v (a) Rour (d) (e) | <u>vith Measur</u> Convert 737 <u>61</u> nd each mea 937.6982 ir A 37' 9 5 " b | ements Corr 7" to ft-in 5" surement to $1 \approx 78$ f par is cut interval | feet-incl | $\frac{17}{17}$ The swith the $\frac{11}{16}$ in pieces. Given the subscript of t | in answer. (6 7' 5" to ##.# , 42' e inches to t ve the length 12 | 60) (90) = 5 ## ft (c) Co he nearest 16 of each piece ft7 | 400 Invert 7' 7 7.65 h inch. | 78" to #.### | ft |
| Wor 9) | rking v (a) Rour (d) (e) previat | vith Measur Convert 737 61' nd each mea 937.6982 ir A 37' 9 5" b | ements <u>Corr</u> to ft-in $5^{\prime\prime}$ surement to $x \approx 78$ f par is cut into the fixes | feet-incl | $\frac{required i}{Convert 1}$ $\frac{17}{16}$ The swith the pieces. Given the second | in answer. (6 7' 5" to ##.# , 42' e inches to t ve the length 2 | <u>50) (90) = 5</u> ## ft (c) Co he nearest 16 of each piece ft7 | $\frac{400}{7.65}$ h inch. to the nea $\frac{3}{16}$ in | 78" to #.### | ft |
| Wor 9) Abb | rking v (a) Rour (d) (e) previat Wri (a) | with Measury Convert 737 <u>61</u> and each mea 937.6982 ir A 37' 9 $\frac{5}{8}$ " b rions and Pre te in an alte 7 $\frac{1}{2}$ Mb = | ements Corr T" to ft-in 5 " surement to $a \approx -\frac{78}{78}$ f bar is cut into fixes rnative form $7,5 \times 10$ | feet-incl | $\frac{required i}{Convert 1}$ $\frac{17}{16}$ The swith the $\frac{11}{16}$ in pieces. Given the difference of t | in answer. (6 7' 5" to ##.# , 42' e inches to t ve the length / 2 oving the orig (b) 50 thous | 50) (90) = 5 ## ft (c) Co he nearest 16 of each piece ft7 inal M, G, µ. sandths cm= _ | 400 Invert 7' 7 7.65 h inch. to the nea <u>3</u> 16 in Many | rest 16 th inch. | ft |
| <u>Мо</u> 9) <u>АЬ</u> Е 10) | rking v (a) Rour (d) (e) previat Wri (a) (c) | with Measure Convert 737 Convert 737 Convert 737 and each mea 937.6982 ir A 37' 9 $\frac{5}{8}$ " b rions and Pre- te in an alte 7 $\frac{1}{2}$ Mb = 400 Gw = | ements Corr T" to ft-in 5" surement to $a \approx -78$ f bar is cut into fixes rnative form 7,5 × 10 4 x 10 ⁴ | tect units (b) feet-incl t o 3 equal as indicc | $\frac{required i}{Convert 1}$ $\frac{17}{16}$ The swith the pieces. Given the second | in answer. (6 7' 5" to ##. , $\frac{42}{}$ we inches to t / 2 oving the orig (b) 50 thous (d) 70 µg = | $\frac{60}{90} = 5$ $\frac{60}{90} = $ | $\frac{400}{7.65}$ h inch. to the nea $\frac{3}{16}$ in $Many$ 0.07 | rest 16 th inch. | ft |
| <u>Мог</u> 9) <u>АЬЕ</u> 10) | rking v (a) Rour (d) (e) wri (a) (c) (e) | <u>vith Measur</u> Convert 737 <u>61</u> nd each mea 937.6982 ir A 37' 9 ⁵ / ₈ " b rions and Pre te in an alte 7 ¹ / ₂ Mb = 400 Gw = <u>5.2 Gv</u> 1.3 Msec = | ements <u>Corr</u> to ft-in 5^{11} surement to $a \approx 78$ f bar is cut into efixes rnative form $7,5 \times 10$ 4×10^{10} | tect units (b) feet-incl tt o 3 equal as indicc | $\frac{required i}{Convert 1}$ $\frac{17}{16}$ hes with th $\frac{11}{16}$ in pieces. Given the description of the desc | in answer. (6 7' 5" to ##. , 42' e inches to t /2 oving the orig (b) 50 thous (d) 70 µg = | 50) (90) = 5 ## ft (c) Co he nearest 16 of each piece ft7 inal M, G, μ. sandths cm= | $\frac{400}{7.65}$ h inch. to the nea $\frac{3}{16}$ in $Many$ 0.07 | 78" to #.### 56' rest 16 th inch. possible a 0.5 mm mg | ft |

A new 600 megawatt power plant is to be built. 600 megawatts = (circle the correct answer) 11) (a) B) 6×10^6 watts (C) 600 million watts A) 6 million watts D) 6 billion watts E) 60,000 watts F) None of these A 200 mg once-a-week allergy pill has just been FDA approved. 200 mg = (b) B) 2×10^3 grams A) 2 grams C) 2 thousand grams E) 0.002 grams F) None of these D) 0.2 grams There are about 7 billion people in the world. Assume each person (on average) is responsible for the (c) consumption of 20 gallons of oil per month. How much total oil is consumed per year? Write your answer in scientific notation. 7×10° people 20 gol × 12 mo = 1.68×10¹² gal/yr 5,280 ft = 1 mi 7.48 gal = 1 ft^3 2.54 cm = 1 in 1.61 km = 1 mi Use Round to a whole number 0.1752 mi \rightarrow ft 12) 0.1752 mi 5280 ft = 925' 13) mach 2 = 2200 ft/sec \rightarrow mph 2200 ft [1 mi] 3600 sec = 1500 mph 14) 5 million gpm \rightarrow cfs 5×10 gul [1 min] [1 aift] = 11,141 cfs 15) 54,000 sq-in → sq-ft $54000 \text{ in}^2 \left[\frac{l^2}{l^{22}} \frac{ft^2}{\ln^2} \right] = 375 \text{ ft}^2$ 16) What is the area (as sq-ft) of the trapezoid shown? B₁ = 22' 8", B₂ = 15' 4", H = 18' 7" $A = 706.17 \text{ ft}^2 = 353.08 \text{ ft}^2$ **Direct Proportions** $\frac{18.3}{1.5} = \frac{400}{x}$ $\frac{32}{15} = \frac{x}{70}$ (b) Solve for x: 18) (a) Solve for x: $\chi = \frac{448}{3}$ Xw 32.8 page 3

Basic Geometries-

- 17) A circle has a 3' 5" radius.
 - (a) Give the <u>Area</u> to the nearest <u>tenth sq-ft</u>. (b) Give the <u>Circumference</u> to the nearest <u>inch</u>. $A \sim 36.7 \text{ sf}$ 258'' or 21'6''
 - (c) A triangle has sides 28, 45, 53. Use <u>Heron's formula</u> to find its area.

5=63 A= 630

A box is 18" × 23" × 50". Give the volume in cu-in and cu-ft.

(d) cu-in: 20700 in^3 (e) cu-ft: <u>11.98 ft^3</u>

Graphs and their Interpretation:

19a) Write down the coordinates of the three points:

$$A = (-4, 4)$$
 $B = (-5, -2)$ C

19b) Plot and label:

$$P = (7, -7)$$
 $Q = (0, 8)$

A. B. C.

Virus Count vs Time

H1D5 ---

H2F2

20) The CDC (Center for Disease Control) conducted a study of a new antiviral treatment. Both groups were infected at the same time. H1D5 patients received the treatment and H2F2 patients did not receive the treatment. Based on the graph shown, briefly answer the following questions <u>USING EVERYDAY LANGUAGE</u> <u>PERTAINING TO A PERSON'S HEALTH</u>. Your answer must clearly demonstrate that you have interpreted the graph correctly.

Virus/cc⁴ 1500

1000

= (6,0)

- (a) What occurred at point (a)? Infection
- (b) On what day are H2F2 patients sickest? Day 8
- (c) What occurred during section (c)? Patients got better
- (d) What occurred at point(d) Patients were cured
- 500 (a) 0 5 5 10 15 20

(b

(e) What was the overall outcome of the treatment vs. no treatment?

With treatment, patients got better in half the time. They got just as side. BONUS (5 points)

A rectangular pool is 50 yds × 42' 7 $\frac{1}{2}$ " × 8' 6 $\frac{7}{8}$ ". How many <u>gallons</u> of water will that hold?

54813 ft 3 [7.41 oul] 2 410,002 gel

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