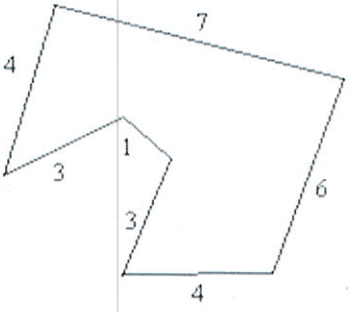
MTH 151, Homework #7, Fall 2017 Name KEY

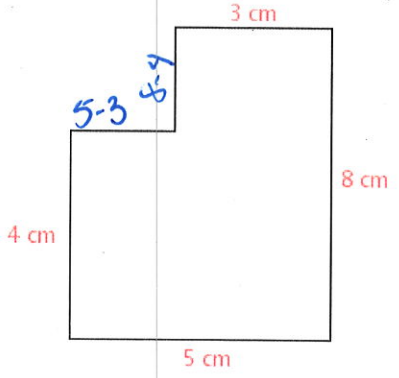
Instructions: Work problems on a separate sheet of paper and attach work to this page. You should show all work to receive full credit for problems. Checking your work with computer algebra systems is fine, but that doesn't count as "work" since you won't be able to use CAS programs on exams or quizzes. Sketch any graphs you obtain. Questions with compact answers can be recorded directly on this page. Graphs and longer answers that won't fit here, indicate which page of the work the answer can be found on and be sure to clearly indicate it on the attached pages.

1. Find the perimeter of the following shapes.

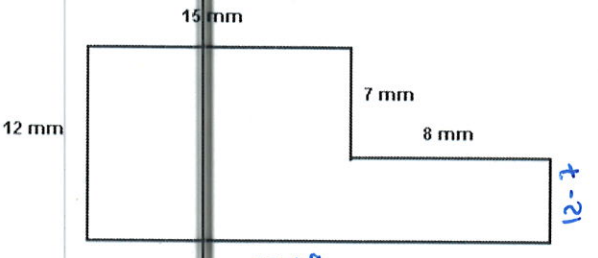
a.



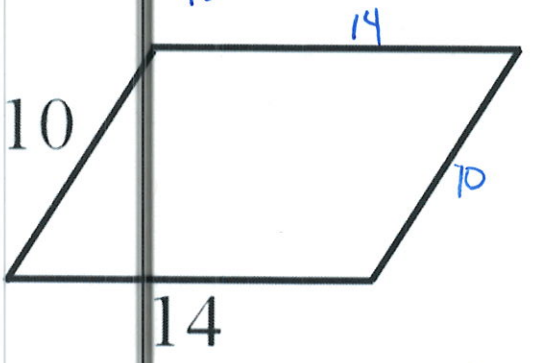
b.



c.

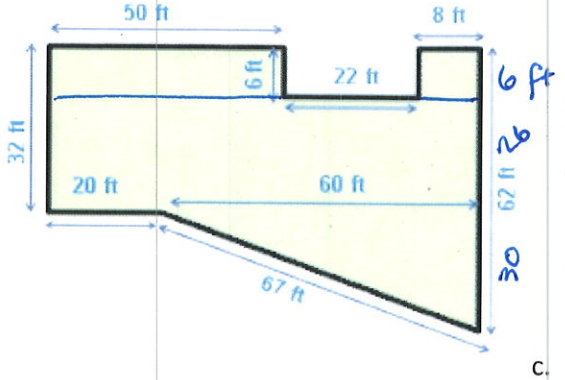


d.

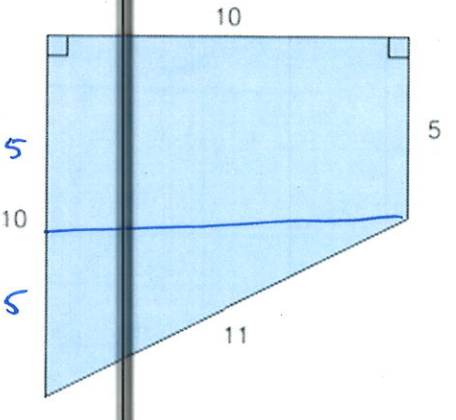


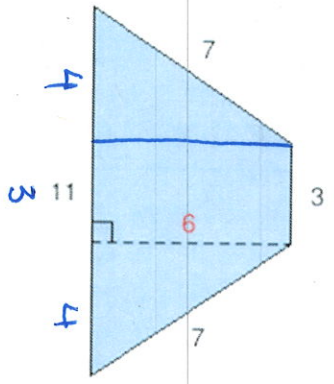
2. Find the area of the following regions.

a.

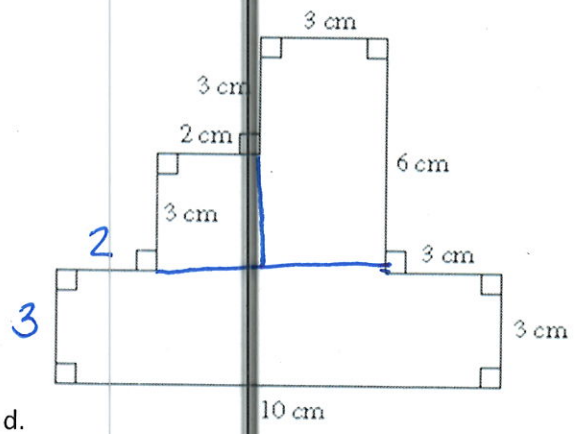


c.



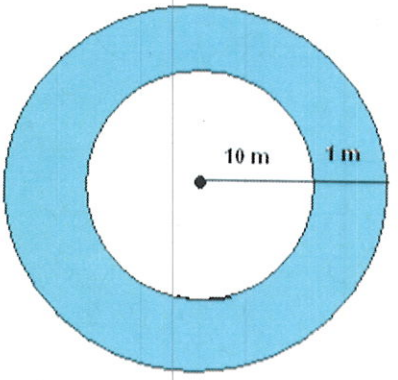


b.



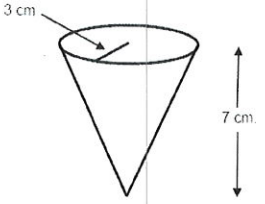
d.

3. Find the area of the shaded region.

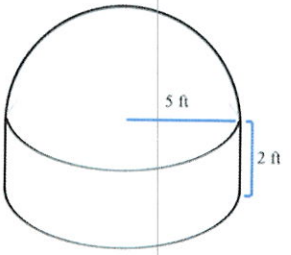


4. A ceiling measuring 9×15 ft^2 can be painted for \$60. How much would it cost to paint a ceiling 18×30 ft^2.

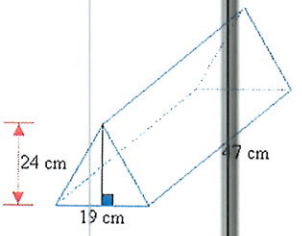
5. Find the volume of the given shapes.



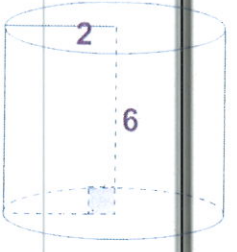
a.



b.



c.



d.

MTH 151 Homework #7 Key

1a. $4+7+6+4+3+1+3 = 28$

c. $12+15+7+8+(8+15)+(12-7) = 70$

b. $4+5+8+3+4+2 = 26$
$(8-4)\ (5-3)$

d. $10+14+10+14 = 48$

2a. $50\times6 + 8\times6 + 26\times80 + 60\times30\times\frac{1}{2} = 3328$

c. $10\times5 + \frac{1}{2}(5)(10) = 75$

b. $4\times6\times\frac{1}{2} + 4\times6\times\frac{1}{2} + 6\times3 = 42$

or $\frac{1}{2}(11+3)\cdot6 = 42$

d. $3\times10 + 2\times3 + 3\times6 = 54$

3. $\pi(11)^2 - \pi(10)^2 = 121\pi - 100\pi = 21\pi$

4. $\frac{9\times15}{60} = \frac{18\times30}{x} \Rightarrow 135x = 324{,}000$
$x = 240$

5. a. $V = \frac{1}{3}\pi r^2 h = \frac{1}{3}\pi(3)^2\cdot7 = 21\pi$

b. $\frac{1}{2}\left(\frac{4}{3}\pi(5)^3\right) + \pi(5)^2\cdot2 = \frac{250}{3}\pi + 50\pi = \frac{400}{3}\pi$

c. $\frac{1}{2}(24)(19)(47) = 10{,}716$

d. $\pi(2)^2(6) = 24\pi$

6. a. reflection
b. translation
c. rotation
d. glide reflection