

Walking Tour Of Worcester



Names

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Map of Worcester, from Google Maps 2019-12-16

Picture of Boynton Hall, from WPI <https://www.wpi.edu/sites/default/files/2019/09/24/Boynton%20Hall.jpg>

Picture of Bancroft Tower, from Wikipedia https://en.wikipedia.org/wiki/Bancroft_Tower#/media/File:Bankroft_Tower.jpg

Picture of That's Entertainment, from That's Entertainment

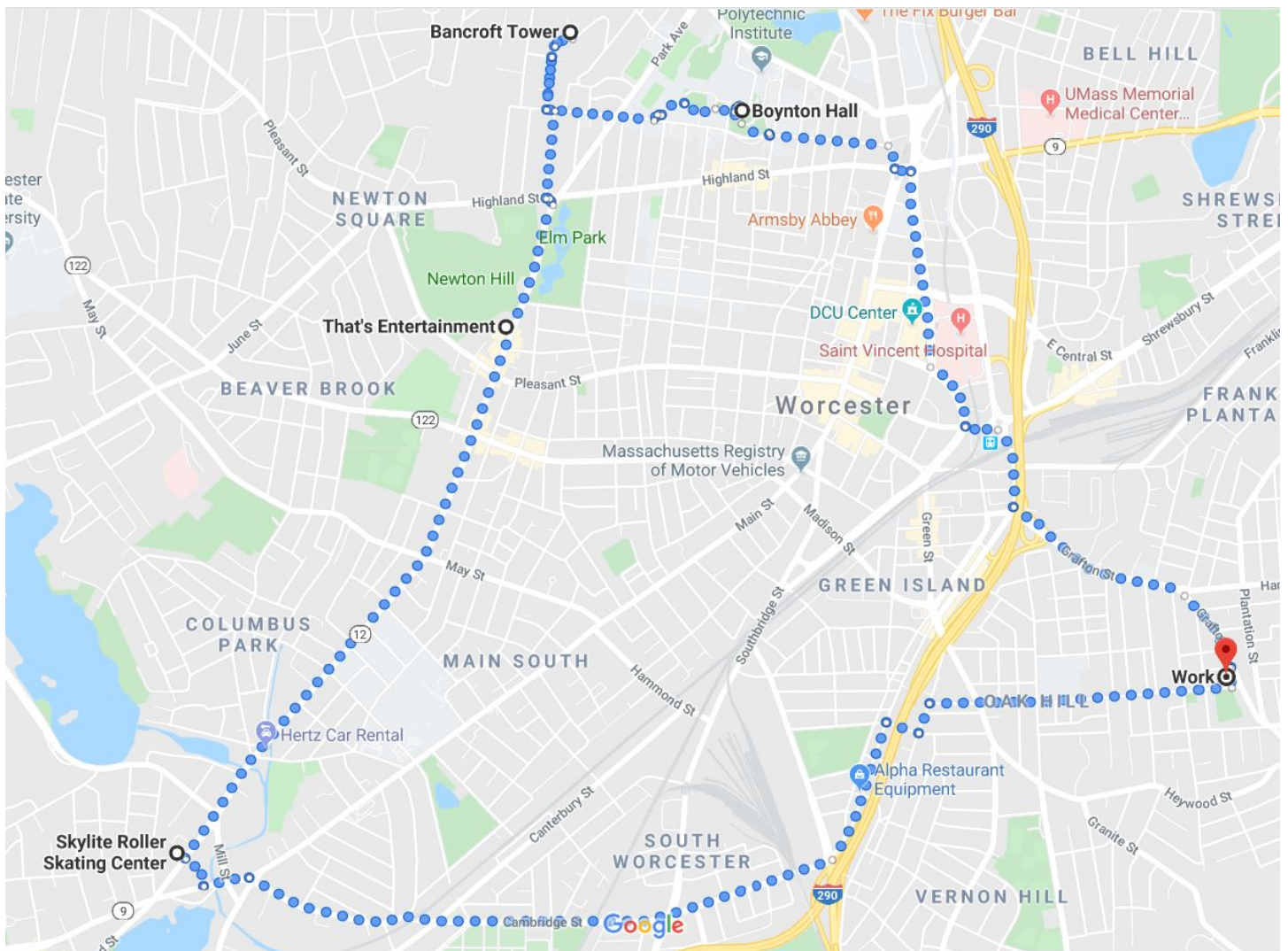
https://www.thatse.com/wp-content/uploads/2015/04/902260_10151950512999730_1298145175_o.jpg

Picture of Skylite Roller Skating, from Dining Advantage Entertainment

https://cdn.shopify.com/s/files/1/1788/2177/products/8806221086750_C000000000001UHK_9e4077aa-9610-4791-ab84-3e7222907b38.jpg

Entering Worcester Picture, from Committee for Public Counsel Services

<https://www.publiccounsel.net/dir/wp-content/uploads/sites/10/2014/07/welcome1.jpg>



Mr. Duque has set up a walking scavenger hunt at Worcester East Middle, Worcester Polytechnic Institute (WPI, specifically at Boynton Hall), Bancroft Tower, That's Entertainment, and Skylite Roller Skating before heading back to East Middle.

Before you set off on your walking adventure, which should take you 3 hours and 2 minutes to walk (not including time spent at the locations), you're first asked to estimate how many miles this journey will be.

But now it's time to actually calculate the mileage. (note - these are actual mileages from Google Maps)

From Where to Where	Miles
East Middle School to WPI:	$43x + 0.81$
WPI to Bancroft Tower:	$19x + 0.23$
Bancroft Tower to That's Entertainment:	$33x - 0.19$
That's Entertainment to Skylite Roller Skating:	$-15x + 2.05$
Skylite Roller Skating to East Middle School:	$65x + 1.35$

Add together the expressions to calculate the total walking distance of this scavenger hunt. Write it below.

_____ miles

Check in with Mr. Duque. If the above expression is correct, he will give you a value to use for 'x'.

What did Mr. Duque give you for the value of 'x'? $X =$ _____

Now, plug in (substitute) Mr. Duque's value of 'x' into your expression and calculate the total walking distance (in miles) for this scavenger hunt..

Your first stop is Boynton Hall.

Boynton Hall is located on the campus of Worcester Polytechnic Institute (WPI), one of the nine colleges/universities in Worcester, and serves as the college's main administration building.



There are 4,650 undergraduate students at WPI. They study in one of over 14 academic departments and 23 programs, including Air Force Aerospace Studies, Fire Protection Engineering, Interactive Media and Game Development, and Humanities & Arts. In addition to taking classes at WPI, students are also allowed to sign up and take classes at other area colleges/universities. WPI boasts over 235 student clubs and organizations, 20 Division III sports teams, 41 club sports and intramural teams, and one beloved mascot, Gompei.

What is a Gompei? Do the following to get the answer:

There are 38,000 college students in Worcester across 9 different schools. What **fraction** (in simplest form) of Worcester college students attend WPI? The digits of your answer will help spell out what a Gomepi is.

Hint: Try doing something with the GCF.

$$\frac{\text{_____}}{38,000 \text{ students}} = \frac{\text{_____}}{\text{_____}}$$

Gompei is $\frac{\text{_____}}{\text{_____}}$
|----- numerator -----| |----- denominator -----|

Digit	0	1	2	3	4	5	6	7	8	9
Letter	T	H	S	G	R	E	A	O	B	A

Next Stop, Bancroft Tower

Bancroft Tower is a 56-foot-high natural stone and granite tower, which looks like a miniature feudal castle. It is located in Salisbury Park and was built in 1900, in memory of Worcester native politician, historian, and statesman George Bancroft. A total of three towers were built on high points in the city and it's the only one that still stands today.



The tower is 56 feet tall. How many inches is that? (hint: 1 foot = 12 inches) _____ inches

Who in your group is the shortest? _____

How tall, in inches are they? _____ inches tall.

If you cloned and stacked your shortest student head-to-toe, how many shortest students would it take to reach the top of Bancroft Tower? Express your answer as a mixed number.

That's Entertainment

After Bancroft Tower, make your way down Park Ave to the corner of Park Ave and Lois Lane, where you'll find That's Entertainment. It's a comic book store that also buys, sells, and trades video games, toys, anime stuff, board games and role playing games, records, t-shirts, autographs, and more.



Mr. Duque LOVES this store and he's been shopping at it for many years. There's TONS to look at - it's easy to lose track of time looking at all the stuff for sale. Some of the items they have for sale include:

Manga & Graphic Novels	Video Games & Systems	Toys	Comic Books	Random Stuff
<i>Nimona</i> by Noelle Stevenson \$11.81	Nintendo NES Action Set (Complete in Box) \$128.95	Transformers Starscream \$41.49	Various Batman Comics \$2.99	Poster of Coney Island Hot Dog Sign \$13.87
<i>My Hero Academia</i> Anri Yoshi and Kohei Horikoshi \$6.99	Various NES and Sega Genesis Used Games \$6.95	Original Teenage Mutant Ninja Turtles (missing weapon) \$5.99	Various Iron Man Comics \$3.99	Tom Brady Poster \$9.99
<i>Samurai 8: Hachimaruden</i> Masashi Kishimoto and Akira Okubo \$9.99	Various SuperNES Games \$9.99	Stranger Things Action Figures \$14.79	DuckTales Comics \$2.50	Naruto Mug \$16.45
	Various PS4 Used Games \$27.45	Funko Pop! Figures \$9.65	Collection of 10 Random Comic Books \$19.95	Slimer (Ghostbusters) Stuffed Animal \$22.39

While you're in the store, some of these sale items catch your eye. You've got $4.5d + 11$ dollars to spend. What will you buy?

Step 1: Roll two dice. I got _____ and _____. The sum of my roll is _____.

Step 2: Substitute your sum from step 1 for the variable d . This will be how much money you have to spend.

$$4.5d + 11 = \underline{\hspace{10cm}}$$

Step 3: Spend! Pick items from the above list. You can't spend more than what you have with you! You are allowed to spend less. However, you can't go home with more than \$3.00 in unspent money!!! Create your list on the next page.

That's Entertainment Shopping Trip

Item	Cost of 1 Item	How Many Do You Buy?	Total Cost

Total Cost for Everything You Purchased: _____

Your Change: _____

Skylite Roller Skating



A little walk down Park Ave gets you to Skylite Roller Skating Center. Skylite has been hosting parties and open skate sessions for over thirty years! You're down there today to get a little bit of information. You want to have a roller skating party for you and your Numeracy classmates and need to find out how much a party costs and what it comes with. When you ask one of the members of the Fors family, they tell you there's two packages you can pick from:

<p>BIRTHDAY PARTY</p> <p>\$160.00 for 10 children \$10.00 for each additional child over the initial 10.</p> <p>Your party includes:</p> <ul style="list-style-type: none">- Admission and skate rental for all of the children- ONE pizza package (a large 8 slice pizza with a pitcher of soda)- A Carvel ice cream cake- A free pass for the birthday child to come back, as well as dollar off passes for all of their friends- A clip on flashing light for the birthday child- Parents of the birthday child skate for free (All other PARENTS are \$8.00 only if they would like to skate)- Additional Pizza Packages are \$16.00 for a large 8 slice pizza and a pitcher of soda- 90 minutes of skating, 30 minutes for party <p>*NO FOOD is allowed to be brought into the building</p>	<p>PRIVATE PARTY</p> <p>\$325.00 for 2 hour rental of our facility</p> <p>Your Party Includes:</p> <ul style="list-style-type: none">- 2 hour rental of the rink, strictly designated for your party/function- As many guests as you would like to invite- Skate rentals for all of your guests- DJ services <p>* Pizza Packages are \$16.00 for a large 8 slice pizza and a pitcher of soda</p> <p>- You may bring in your own cake for PRIVATE PARTIES ONLY for a \$25.00 fee</p>
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All of the students (and Mr. Duque) from your Numeracy class will be going to your party. Parents will also be there (one parent per student). Three-fourths of the parents will ask for a slice of pizza and some soda. One-half of the parents will want to rollerskate. **(NOTE: If there are fractions/decimals of a parent, please ROUND UP to the nearest whole number/parent!)**

Skylite Skating (continued)

How many students are going? _____

How many parents/adults? _____

How many parents/adults will ask for pizza? _____

How many parents/adults will be skating? _____

Show your work in calculating how much each type of party will cost you. Attach scrap paper if you need room

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Which party will you pick? Why did you select that one?

Finally, Back at WEMS!

Finally, you made it back from the scavenger hunt with completed worksheets and tired legs! Just as you run into room 203 to hand in your packet, you see a message on the board:

“Congratulations on making it this far! Three more puzzles stand between you and winning!”

Solve the following two puzzles. Mr. Duque will give no hints, only a “yes” or a “no” if you ask if your answer is the correct answer.

**WHAT
IS MISSING?**

$$1=5$$

$$2=25$$

$$3=125$$

$$4=625$$

$$5=?$$

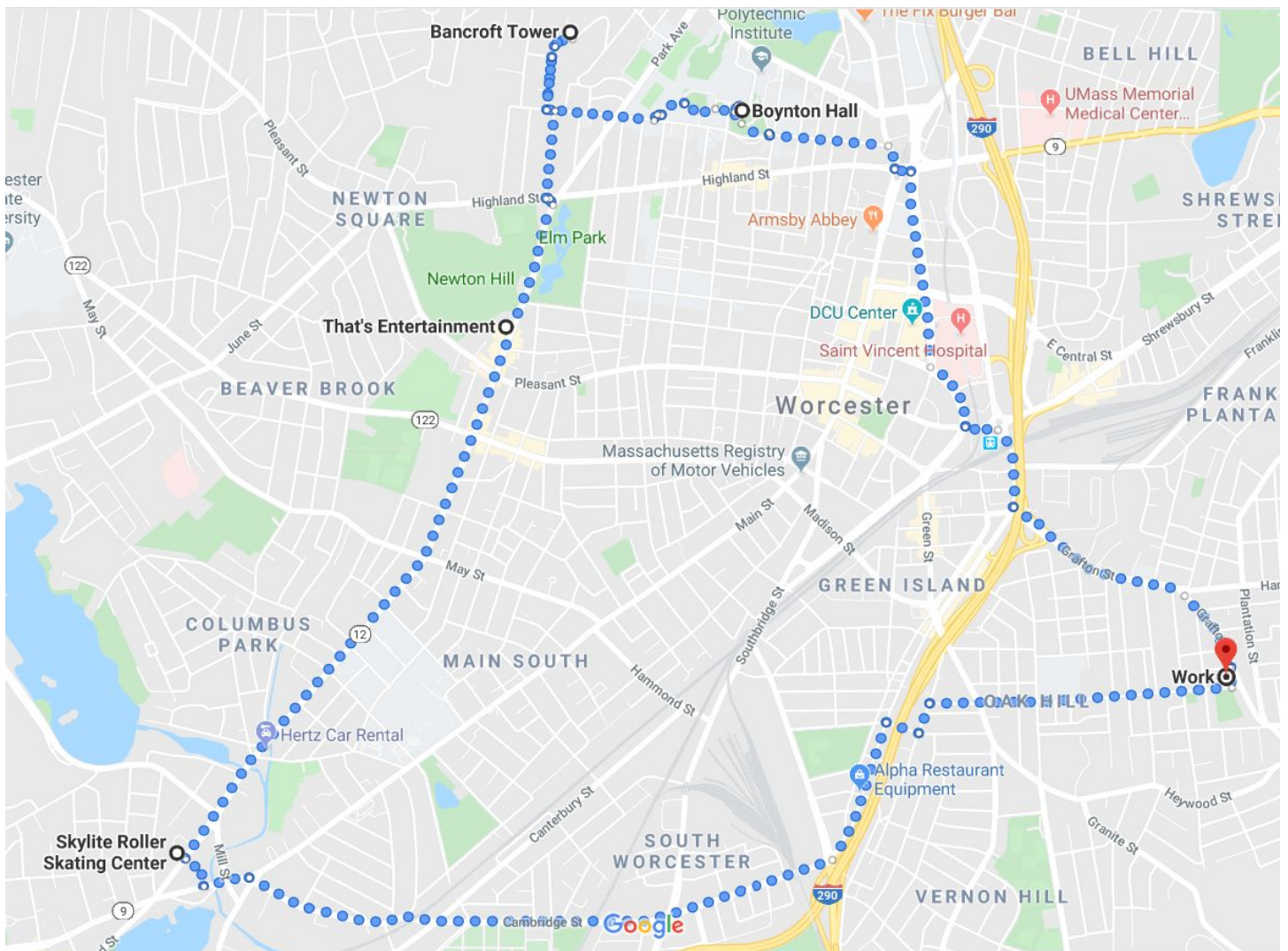
**WHAT
IS MISSING?**

**1 2 3 4 5 6 7 8 9 10 11
12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27
28 29 30 31 33 34 35 36
37 38 39 40 41 42 43 44
45 46 47 48 49 50 51 52**

Then you're done!!!

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A N S W E R S



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Add together the expressions to calculate the total walking distance of this scavenger hunt. Write it below.

$$145x + 4.25 \text{ miles}$$

Check in with Mr. Duque. If the above expression is correct, he will give you a value to use for 'x'.

What did Mr. Duque give you for the value of 'x'? $x = 0.03$

Now, plug in Mr. Duque's value of 'x' into your expression and calculate the total walking distance (in miles) for this scavenger hunt..

$$\begin{aligned} &145 \times 0.03 + 4.25 \\ &4.35 + 4.25 \\ &8.6 \text{ miles} \end{aligned}$$

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$$\frac{4,650}{38,000} = \frac{93}{760}$$

Gompei is $\frac{\underline{9} \quad \underline{3}}{\underline{7} \quad \underline{6} \quad \underline{0}}$
 |----- numerator -----| |----- denominator -----|
A G O A T

Digit	0	1	2	3	4	5	6	7	8	9
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The tower is 56 feet tall. How many inches is that? (hint: 1 foot = 12 inches) 672 inches

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$$2=25$$

$$3=125$$

$$4=625$$

$$5=?$$

5 = 1 (see first line)

**WHAT
IS MISSING?**

**1 2 3 4 5 6 7 8 9 10 11
12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27
28 29 30 31 33 34 35 36
37 38 39 40 41 42 43 44
45 46 47 48 49 50 51 52**

missing 32

Then you're done!!!