

Name \_\_\_\_\_

1. If the P wave arrived at 9:35:20 p.m. and the S wave arrived at 9:40:00 p.m. what is the distance to the epicenter? Show your work below.

2. If the P wave arrived at 12:56:00 p.m. and the S wave arrived at 1:03:40 p.m. what is the distance to the epicenter? Show your work below.

3. If the P wave arrived at 3:14:20 a.m and the epicenter distance is 3800 km what time did the earthquake begin? Show your work below.

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4. If the S wave arrived 6:47:20 a.m. and the epicenter distance is 4600 km what time did the earthquake start? Show your work below.

5. If an earthquake began at 7:22:20 and your city is located 2200 km away at what time would the P wave arrive at your city? What time would the S wave arrive at your city? Show your work below.

6. If an earthquake began at 2:07:20 p.m. and seismograph station A is 5000 km away at what time will the P wave arrive at station A? At what time would the S wave arrive at station A? Show your work below.

7. If an earthquake occurred in St. Louis, Missouri at 6:16 a.m. at what time would the P and S waves arrive at the following stations:

		P wave	S wave
New York City	1600 Km away		
Seattle	2400 Km away		
Los Angeles	2900 Km away		
Dallas	800 km away		

Name

KEY

1. If the P wave arrived at 9:35:20 p.m. and the S wave arrived at 9:40:00 p.m. what is the distance to the epicenter? Show your work below.

H	M	S
09	40	00
-09	35	20
00	04	40

3200 km

2. If the P wave arrived at 12:56:00 p.m. and the S wave arrived at 1:03:40 p.m. what is the distance to the epicenter? Show your work below.

H	M	S
<del>12</del> 01	<del>56</del> 03 <sup>63</sup>	40
-12	56	00
00	07	40

6000 km

3. If the P wave arrived at 3:14:20 a.m. and the epicenter distance is 3800 km what time did the earthquake begin? Show your work below.

00:06:50 P wave travel time

H	M	S
03	14 <sup>13</sup>	<del>20</del> 80
-00	06	50
03	07	30 ← origin time

4. If the S wave arrived 6:47:20 a.m. and the epicenter distance is 4600 km what time did the earthquake start? Show your work below.

00:14:00 S wave travel time

H	M	S
06	47	20
-00	14	00
06	33	20 ← origin time

5. If an earthquake began at 7:22:20 and your city is located 2200 km away at what time would the P wave arrive at your city? What time would the S wave arrive at your city? Show your work below.

H	M	S
07	22	20
+ 00	04	20
07	26	40

H	M	S
07	22	20
+ 00	08	90
07	30	20

P wave arrival time

S wave arrival time

6. If an earthquake began at 2:07:20 p.m. and seismograph station A is 5000 km away at what time will the P wave arrive at station A? At what time would the S wave arrive at station A? Show your work below.

H	M	S
02	07	20
00	08	20
02	15	40

H	M	S
02	07	20
00	15	00
02	22	20

P wave arrival time

S wave arrival time

7. If an earthquake occurred in St. Louis, Missouri at 6:16 a.m. at what time would the P and S waves arrive at the following stations:

		P wave	S wave	
New York City	1600 Km away	06:19:20	06:22:00	travel time
Seattle	2400 Km away	06:20:40	06:24:30	arrival time
Los Angeles	2900 Km away	06:21:30	06:26:00	travel time
Dallas	800 km away	06:17:50	06:19:20	arrival time