

## 5 Star Science Answers

**School Name** \_\_\_\_\_ **School Number** \_\_\_\_\_

Participant's (1) Name \_\_\_\_\_ (Be Neat)

Participant's (1) Name \_\_\_\_\_ (Be Neat)

Tie Breaker 1: \_\_\_\_\_

### Physics

#### Lab

#### Questions

1	(1pt) 0.217 J <b>Sig Figs</b>	<b>11</b>	(1pt) 5
2	(1pt) 0.217 J	<b>12</b>	(1pt) 6.46 W <b>Sig Figs</b>
3	(1pt) 1.18 m/s	<b>13</b>	(1pt) 550 m/s or $5.5 \times 10^2$ m/s <b>Sig Figs</b>
4	(1pt) .3689 kg m/s	<b>14</b>	(1pt) .837 m/s <sup>2</sup>
5	(1pt) 0.3689 kg m/s	<b>15</b>	(2 pts) 8.17 s
6	(1pt) 5.57 m/s	<b>16</b>	(1pt) 11.8 m
7	(1pt) 2139.5 N/m	<b>17</b>	(1pt) $a(t) = -45\cos(3t)$
8	(1pt) 1.028 J	<b>18</b>	(1pt) 7.848 N
9	(1pt) 0.44 s <b>Sig Figs</b>	<b>19</b>	(1pt) 0 <b>Tie Breaker 2</b>
10	(1pt) 5.68 m/s		

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## Earth and Space Lab

20	(1pt) P wave
21	(1pt) Shear or transverse wave
22	(1pt) 3 minutes
23	(1pt) 100 times
24	(1pt) 42 km

25. Find the epicenter. (5 pts)



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### Earth and Space Questions

<b>26</b>	(1pt) New and Full moon
<b>27</b>	(1pt) Collapsed LARGE volcanic crater or depression
<b>28</b>	(1pt) Volcanic neck
<b>29</b>	(1pt) Place where one tectonic plate slides underneath another plate
<b>30</b>	(1pt) Tidal forces exerted by Jupiter and the other moons.
<b>31</b>	(1pt) 2
<b>32</b>	(1pt) Decay of radioactive elements Tie Breaker 3
<b>33</b>	(1pt) troposphere
<b>34</b>	(1pt) Coriolis force is not strong enough near the equator to start the storm's rotation.
<b>35</b>	(1pt) 1

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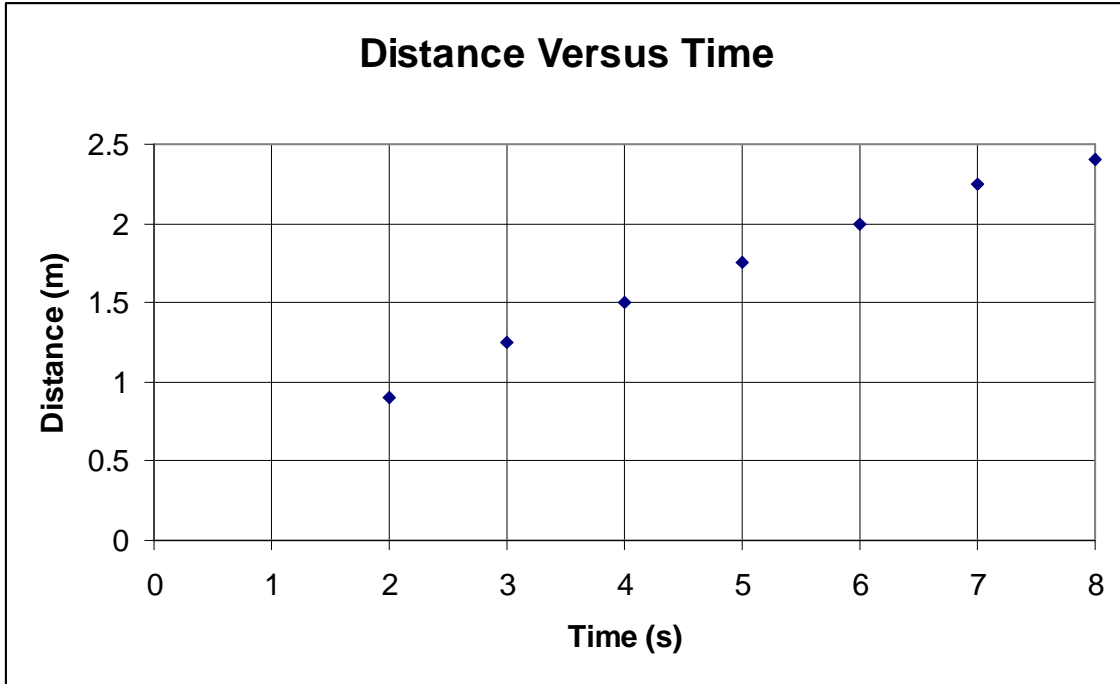
### Inquiry Lab AND Questions

36	(2 pt) $125 \text{ cm}^2$
37	(2 pt) 0.549 cm or 5.49 mm
38	(1 pt) The volume of the flat BB "pancake" is greater than the BB's volume in the graduate cylinder.
39	(1 pt) 7.14%
40	(1 pt) 20.7%
41	(1 pt) 95 %
42	(1 pt) The proposal that no difference exists between groups.  The prediction that an observed difference is due to chance alone and not due to a systematic cause
43	(1 pt) 10.39 or 10.40 or 10.38 cm <b>Sig Figs</b>
44	(1pt) 3.89 g/mL <b>Sig Figs</b>
45	(1 pt) 5.00 km
46	(1 pt) - 19.38 oC/min . CANNOT be -18.75 oC/min. Range $\rightarrow$ -19.06 --- -20 oC/min
47	(1 pt) Tie Breaker 4 -23.4 oC/min
48	(1 pt) about 4.275 mm <b>SIG FIGS</b>

### Inquiry Questions cont.

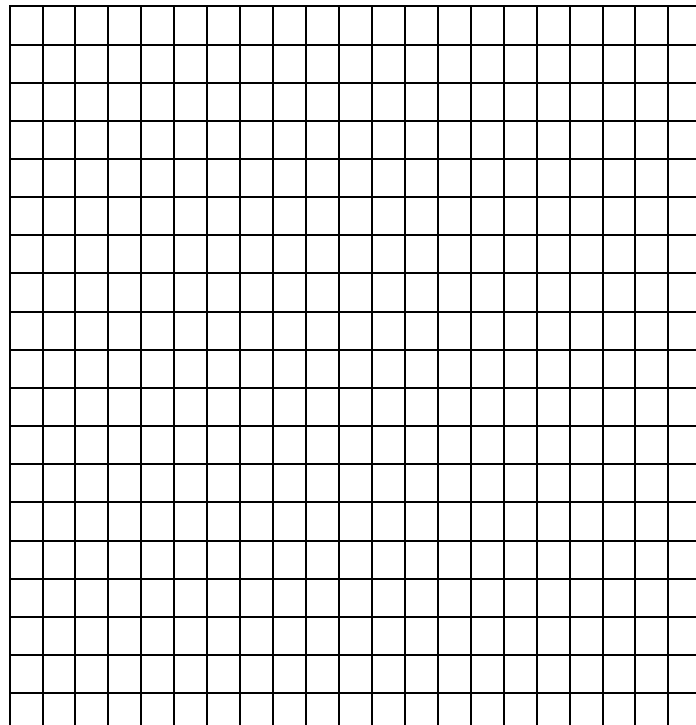
49

(2 pt) Equation is approximately distance = (0.25m/s) time + 0.4714m Best fit line cannot go thru the 1st and last points.



50

(3 pts)



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### Biology

Lab		Questions	
51	(1 pt ) Simple sugar	59	(1 pt ) 1
52	(1 pt ) starch	60	(1 pt ) 2
53	(2 pt ) Sugars are quickly turned into starch.	61	(1 pt ) 4
54	(2 pt ) glucose, fructose, galactose, erythrose, ribose	62	(1 pt ) 1
55	(1 pt ) water	63	(1 pt ) 3
56	(1 pt ) No affect. Calvin cycle occurs independent of light. Tie breaker 5	64	(1 pt ) 3
57	(1 pt ) $6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$	65	(1 pt ) 4,d
58	(1 pt ) 5	66	(1 pt ) 1
		67	(1 pt ) 4
		68	(1 pt ) 2

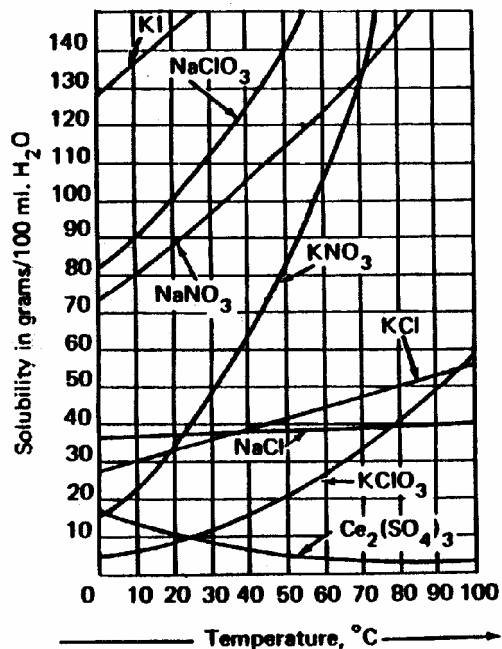
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## Chemistry Lab

69	(1 pt) $\text{KClO}_3$
70	(1 pt) 72 C
71	(1 pt) 400g
72	(1 pt) 30 g
73	(1 pt) 40 mL
74	(1 pt) unsaturated
75	(1 pt) supersaturated
76	(1 pt) . saturated

77. (1pt)



78. \_\_\_\_\_ (1pt) 10 m

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### Chemistry Questions

79	(1 pt) Tin(IV) Dichromate Tie Breaker 6
80	(1 pt) F, B, Ge, Pb
81	(1 pt) $2 \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + 13 \text{O}_2 \Rightarrow 8 \text{CO}_2 + 10 \text{H}_2\text{O}$
82	(1 pts) 22.5 g H <sup>2</sup> O
83	(2 pt) CH <sub>4</sub> 10.0 g O <sub>2</sub> <b>Sig Figs</b>
84	(1 pt) 592.5 caloriesJ
85	(1 pt) left
86	(1 pt) decrease
87	(1 pt) increase