

To complete this worksheet, see the instructions in the textbook (Chapter 5 Investigation).

Table 1. Interpretation of Features, Tectonic Settings, and Causes of Melting

For each site on figure 5.15.a1 in the Chapter 5 Investigation in the textbook (also page 3 of this worksheet), identify the following:

- the type of plate boundary or other setting. Possible choices include: (1) oceanic divergent, (2) continental rift, (3) ocean-ocean convergent, (4) ocean-continent convergent, (5) continental collision, (6) hot spot in an ocean, or (7) hot spot in a continent. All of these settings are not present in this area;
- the most likely cause of melting. The options are (1) decompression melting either beneath a mid-ocean ridge or near a rising mantle plume, (2) melting by adding water along a subduction zone, and (3) melting of continental crust caused by an influx of mantle-derived magma. More than one of these causes might apply to a site.

Site	Name of Feature	Type of Plate Boundary or Other Feature (circle the best answer)	Likely Cause of Melting (circle all that apply)
A	Linear island chain	(a) oceanic divergent, (b) ocean-ocean convergent, (c) ocean-continent convergent, (d) hot spot in an ocean	(a) decompression melting as the mantle rises, (b) melting by adding water along a subduction zone, (c) melting of continental crust caused by an influx of mantle-derived magma
B	Circular volcanic depressions, called calderas	(a) continental rift, (b) ocean-continent convergent, (c) continental collision, (d) hot spot in a continent	(a) decompression melting as the mantle rises, (b) melting by adding water along a subduction zone, (c) melting of continental crust caused by an influx of mantle-derived magma
C	Mid-ocean ridge	(a) oceanic divergent, (b) ocean-ocean convergent, (c) ocean-continent convergent, (d) hot spot in an ocean	(a) decompression melting as the mantle rises, (b) melting by adding water along a subduction zone, (c) melting of continental crust caused by an influx of mantle-derived magma
D	Continental magmatic arc	(a) continental rift, (b) ocean-continent convergent, (c) continental collision, (d) hot spot in a continent	(a) decompression melting as the mantle rises, (b) melting by adding water along a subduction zone, (c) melting of continental crust caused by an influx of mantle-derived magma
E	Island arc	(a) oceanic divergent, (b) ocean-ocean convergent, (c) ocean-continent convergent, (d) hot spot in an ocean	(a) decompression melting as the mantle rises, (b) melting by adding water along a subduction zone, (c) melting of continental crust caused by an influx of mantle-derived magma