Red

An airplane is experiencing heavy turbulence while flying at 30,000 feet. The control tower tells the pilot that he should increase his altitude to at least 33,000 feet or decrease his altitude to no more than 26,000 feet to avoid the turbulence. Write and graph a compound inequality that describes the altitude at which the airplane should fly.

Orange

The Fujita Scale (F-scale) is the official classification system for tornado damage. One facto used to classify a tornado is wind speed. Use the information in the table to write an inequality for the range of wind speeds of an F3 tornado.

|  |  |
| --- | --- |
| F-scale number | Rating |
| F0 | 40-72 mph |
| F1 | 73-112 mph |
| F2 | 113-157mph |
| F3 | 158-206 mph |
| F4 | 207-260 mph |
| F5 | 261-318 mph |

Yellow

Each type of fish thrives in a specific range of temperatures. The optimum temperatures for sharks range from 18°C to 22°C, inclusive. Write an inequality to represent temperatures where sharks will **not** thrive.

Green

Humans hear sounds with sound waves within the 20 to 20,000 hertz range. Dogs hear sounds in the 15 to 50,000 hertz range.

a. Write a compound inequality for the hearing range of humans and one for

the hearing range of dogs.

b. What is the union of the two solution sets?

c. What is the intersection of the two solution sets?

d. Write an inequality or inequalities for the range of sounds that dogs can

hear, but humans cannot.

Blue

About 20% of the time you sleep is spent in rapid eye movement (REM) sleep, which is associated with dreaming. If an adult sleeps 7 to 8 hours, how much time is spent in REM sleep?