

Commonalities

All-Day Sprint

Math Meet 2007

Directions

Each question below consists of three words or phrases (at least one of which is mathematical) each defining a certain *context*. Your goal is to figure out a single word we are thinking of which has a (separate) special meaning in all three contexts. For example, in the first question the contexts are provided by the phrases "algebra", "scheduling" and "font selection". The word we are thinking of here is "**times**" (which means multiplication in the first context, when events will occur in the second, and the name of a typeface based on the London newspaper in the third)! See how many of the rest of the questions you can answer yourselves. (Submit your answers even if you don't get them all. We'll give the prize to one of the teams that achieves the maximum number of correct responses.)

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| <p>1. Contexts:</p> <ul style="list-style-type: none"> • Algebra • Scheduling • Font Selection <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; padding: 0 5px;">Times</div> <p>(commonality)</p> </div> </div> | <p>8. Contexts:</p> <ul style="list-style-type: none"> • Malicious People • Time as Reckoned in Greenwich, England • An Average <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>2. Contexts:</p> <ul style="list-style-type: none"> • Kitchen appliances • Functions • The deer and the antelope <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>9. Contexts:</p> <ul style="list-style-type: none"> • Weather forecasts • College Graduates • Angles <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>3. Contexts:</p> <ul style="list-style-type: none"> • Geometric Transformations • Mirrors • Introspective Thoughts <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>10. Contexts:</p> <ul style="list-style-type: none"> • Lumberjacks • Ship's Captains • Exponential Functions <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>4. Contexts:</p> <ul style="list-style-type: none"> • Carpenter's Tools • Airports • Euclid's Geometry <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>11. Contexts:</p> <ul style="list-style-type: none"> • Theorems • Professional Photographs • Murder Mysteries <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>5. Contexts:</p> <ul style="list-style-type: none"> • Microscopes • Playgrounds • Rulers that Multiply <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>12. Contexts:</p> <ul style="list-style-type: none"> • Arm Bones • Circles • System for remotely authenticating dial-in users <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>6. Contexts:</p> <ul style="list-style-type: none"> • Blood types • Optimists • Right Half of the Number Line <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>13. Contexts:</p> <ul style="list-style-type: none"> • Calculus • Unoriginal Artwork • Investments Combining Underlying Assets <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |
| <p>7. Contexts:</p> <ul style="list-style-type: none"> • High Quality Meat • Top Member of Parliament • Integers with Few Factors <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> | <p>14. Contexts:</p> <ul style="list-style-type: none"> • About 10,000 soldiers • Algebraic Operations • Bacterial Reproduction <div style="display: flex; align-items: center; margin-left: 100px;"> } <div style="text-align: center;"> <div style="border-bottom: 1px solid black; width: 100px;"></div> <p>(commonality)</p> </div> </div> |

1. times
2. range
3. reflections
4. plane
5. slide
6. positive
7. prime
8. mean
9. degrees
10. logs
11. proof
12. radius
13. derivative
14. division