Academic Challenge 2025			
Topic Distribution – Engineering Graphics			
Торіс	Regional	Sectional	State
Written Questions – Some With Illustrations			
The Drafting Field (Terms, Equipment, ASME standards)	1	1	1
Units/Measuring/Scales	2	2	2
Geometric Construction	3	2	2
Orthographic Projection Theory and Spatial Visualization	4	4	3
Pictorial Drawings	1	1	1
Sectional Views	3	2	2
Auxiliary Views	1	1	1
CAD (Non-software specific 2D and 3D)	2	2	2
Manufacturing Processes	1	1	1
Threads and Fasteners	2	2	2
Dimensioning	3	3	3
Tolerancing	1	2	2
Developments and Intersections	-	1	1
Specialized Applications (Welding/Piping/Electrical)	-	-	1
Visual Problems and Spatial Visualization			
Isometric Comprehension Problems (Sketch & Count)	2	2	2
Missing Line Problems (Sketch & Count)	2	2	2
Pictorial Visualization Problems	4	4	4
Missing View Visualization Problems	4	4	4
Section View Visualization Problems	4	4	4
Total	40	40	40

LIST OF TOPICS 2025 ACADEMIC CHALLENGE REGIONAL EXAM

Bibliography / Reference List

Engineering Graphics

- Bertoline, G., Wiebe, E., Ross, W., and Hartman, N. <u>Fundamentals of Solid Modeling</u> <u>and Graphics Communications, 7th Ed.</u> McGraw-Hill, 2018. ISBN-13: 978-0073375397
- Brown, R., and Brown, W. *Print Reading for Industry*, *12th Ed.* Goodheart-Willcox, 2026. ISBN-13: 979-8-89448-097-8
- <u>Dimensioning and Tolerancing: ASME Y14.5M-2018</u>. The American Society of Mechanical Engineers, 2018. ISBN: 978079187219
- Giesecke, F., Lockhart, S., Goodman, M., and Johnson, C. <u>*Technical Drawing with*</u> <u>*Engineering Graphics*, 16th Ed.</u> Peachpit Press, 2023. ISBN-13: 978-0138065720
- Goetsch, D., Chalk, W., Rickman, R., and Chalk, W. *<u>Technical Drawing for Engineering</u>* <u>*Communication, 7th Ed.* Cengage Learning, 2016. ISBN: 978-1285173016</u>
- Lieu, D., and Sorby, S. *Visualization, Modeling, and Graphics for Engineering Design,* 2nd Ed. Cengage Learning, 2017. ISBN-13: 978-1285172958
- Orthographic and Pictorial Views: ASME Y14.3-2012 (Reaffirmed 2018). The American Society of Mechanical Engineers, 2013. ISBN-13: 978-0791868508
- <u>Screw Thread Representation: ANSI Y14.6-2001 (Reaffirmed 2018)</u>. The American Society of Mechanical Engineers, 2002. ISBN-10: 0791827445
- Sorby, S., Wysocki, A., and Baartmans, B. *Introduction to 3-D Visualization: An Active Approach.* Cengage Learning, 2003. ISBN-13: 978-1401813895