

GRADE 10 ESSENTIAL UNIT E – TRIGONOMETRIC RATIOS

Trigonometric Ratios Calculated to 3 Significant Figures

| Angle [Degrees] | Sin | Cos | Tan | Angle [Degrees] | Sin | Cos | Tan |
|--------------------|-------|-------|-------|--------------------|-------|-------|----------|
| 0 | 0.000 | 1.000 | 0.000 | 46 | 0.719 | 0.695 | 1.04 |
| 1 | 0.017 | 1.000 | 0.017 | 47 | 0.731 | 0.682 | 1.07 |
| 2 | 0.035 | 0.999 | 0.035 | 48 | 0.743 | 0.669 | 1.11 |
| 3 | 0.052 | 0.999 | 0.052 | 49 | 0.755 | 0.656 | 1.15 |
| 4 | 0.070 | 0.998 | 0.070 | 50 | 0.766 | 0.643 | 1.19 |
| 5 | 0.087 | 0.996 | 0.087 | 51 | 0.777 | 0.629 | 1.23 |
| 6 | 0.105 | 0.995 | 0.105 | 52 | 0.788 | 0.616 | 1.28 |
| 7 | 0.122 | 0.993 | 0.123 | 53 | 0.799 | 0.602 | 1.33 |
| 8 | 0.139 | 0.990 | 0.141 | 54 | 0.809 | 0.588 | 1.38 |
| 9 | 0.156 | 0.988 | 0.158 | 55 | 0.819 | 0.574 | 1.43 |
| 10 | 0.174 | 0.985 | 0.176 | 56 | 0.829 | 0.559 | 1.48 |
| 11 | 0.191 | 0.982 | 0.194 | 57 | 0.839 | 0.545 | 1.54 |
| 12 | 0.208 | 0.978 | 0.213 | 58 | 0.848 | 0.530 | 1.60 |
| 13 | 0.225 | 0.974 | 0.231 | 59 | 0.857 | 0.515 | 1.66 |
| 14 | 0.242 | 0.970 | 0.249 | 60 | 0.866 | 0.500 | 1.73 |
| 15 | 0.259 | 0.966 | 0.268 | 61 | 0.875 | 0.485 | 1.80 |
| 16 | 0.276 | 0.961 | 0.287 | 62 | 0.883 | 0.469 | 1.88 |
| 17 | 0.292 | 0.956 | 0.306 | 63 | 0.891 | 0.454 | 1.96 |
| 18 | 0.309 | 0.951 | 0.325 | 64 | 0.899 | 0.438 | 2.05 |
| 19 | 0.326 | 0.946 | 0.344 | 65 | 0.906 | 0.423 | 2.14 |
| 20 | 0.342 | 0.940 | 0.364 | 66 | 0.914 | 0.407 | 2.25 |
| 21 | 0.358 | 0.934 | 0.384 | 67 | 0.921 | 0.391 | 2.36 |
| 22 | 0.375 | 0.927 | 0.404 | 68 | 0.927 | 0.375 | 2.48 |
| 23 | 0.391 | 0.921 | 0.424 | 69 | 0.934 | 0.358 | 2.61 |
| 24 | 0.407 | 0.914 | 0.445 | 70 | 0.940 | 0.342 | 2.75 |
| 25 | 0.423 | 0.906 | 0.466 | 71 | 0.946 | 0.326 | 2.90 |
| 26 | 0.438 | 0.899 | 0.488 | 72 | 0.951 | 0.309 | 3.08 |
| 27 | 0.454 | 0.891 | 0.510 | 73 | 0.956 | 0.292 | 3.27 |
| 28 | 0.469 | 0.883 | 0.532 | 74 | 0.961 | 0.276 | 3.49 |
| 29 | 0.485 | 0.875 | 0.554 | 75 | 0.966 | 0.259 | 3.73 |
| 30 | 0.500 | 0.866 | 0.577 | 76 | 0.970 | 0.242 | 4.01 |
| 31 | 0.515 | 0.857 | 0.601 | 77 | 0.974 | 0.225 | 4.33 |
| 32 | 0.530 | 0.848 | 0.625 | 78 | 0.978 | 0.208 | 4.70 |
| 33 | 0.545 | 0.839 | 0.649 | 79 | 0.982 | 0.191 | 5.14 |
| 34 | 0.559 | 0.829 | 0.675 | 80 | 0.985 | 0.174 | 5.67 |
| 35 | 0.574 | 0.819 | 0.700 | 81 | 0.988 | 0.156 | 6.31 |
| 36 | 0.588 | 0.809 | 0.727 | 82 | 0.990 | 0.139 | 7.12 |
| 37 | 0.602 | 0.799 | 0.754 | 83 | 0.993 | 0.122 | 8.14 |
| 38 | 0.616 | 0.788 | 0.781 | 84 | 0.995 | 0.105 | 9.51 |
| 39 | 0.629 | 0.777 | 0.810 | 85 | 0.996 | 0.087 | 11.4 |
| 40 | 0.643 | 0.766 | 0.839 | 86 | 0.998 | 0.070 | 14.3 |
| 41 | 0.656 | 0.755 | 0.869 | 87 | 0.999 | 0.052 | 19.1 |
| 42 | 0.669 | 0.743 | 0.900 | 88 | 0.999 | 0.035 | 28.6 |
| 43 | 0.682 | 0.731 | 0.933 | 89 | 1.000 | 0.017 | 57.3 |
| 44 | 0.695 | 0.719 | 0.966 | 90 | 1.000 | 0.000 | Infinity |
| 45 | 0.707 | 0.707 | 1.000 | | | | |



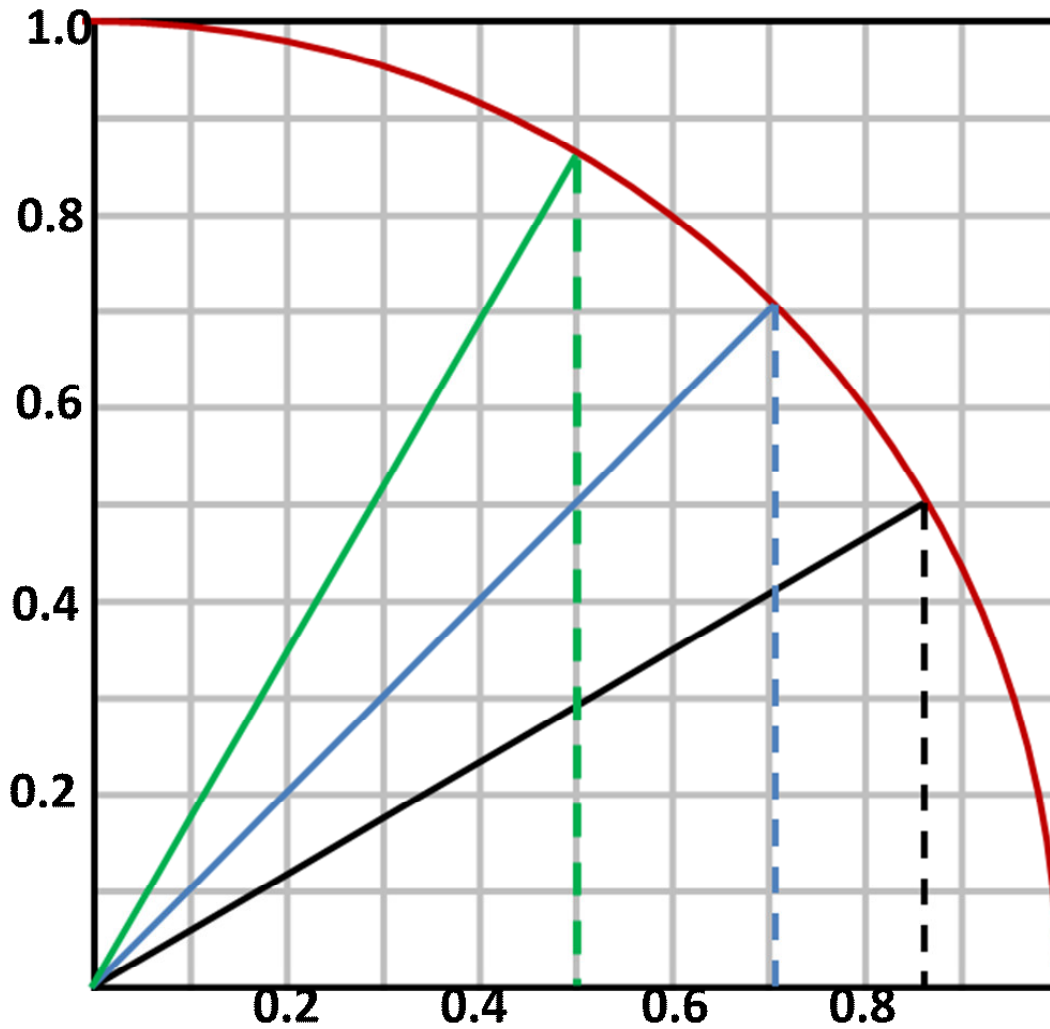
GRADE 10 ESSENTIAL UNIT E – TRIGONOMETRIC RATIOS

Trigonometric Ratios Calculated to 3 Significant Figures

| Angle [Degrees] | Sin | Cos | Tan | Angle [Degrees] | Sin | Cos | Tan |
|--------------------|-------|-------|-------|--------------------|-------|-------|----------|
| 0 | 0.000 | 1.000 | 0.000 | 46 | 0.719 | 0.695 | 1.04 |
| 1 | 0.017 | 1.000 | 0.017 | 47 | 0.731 | 0.682 | 1.07 |
| 2 | 0.035 | 0.999 | 0.035 | 48 | 0.743 | 0.669 | 1.11 |
| 3 | 0.052 | 0.999 | 0.052 | 49 | 0.755 | 0.656 | 1.15 |
| 4 | 0.070 | 0.998 | 0.070 | 50 | 0.766 | 0.643 | 1.19 |
| 5 | 0.087 | 0.996 | 0.087 | 51 | 0.777 | 0.629 | 1.23 |
| 6 | 0.105 | 0.995 | 0.105 | 52 | 0.788 | 0.616 | 1.28 |
| 7 | 0.122 | 0.993 | 0.123 | 53 | 0.799 | 0.602 | 1.33 |
| 8 | 0.139 | 0.990 | 0.141 | 54 | 0.809 | 0.588 | 1.38 |
| 9 | 0.156 | 0.988 | 0.158 | 55 | 0.819 | 0.574 | 1.43 |
| 10 | 0.174 | 0.985 | 0.176 | 56 | 0.829 | 0.559 | 1.48 |
| 11 | 0.191 | 0.982 | 0.194 | 57 | 0.839 | 0.545 | 1.54 |
| 12 | 0.208 | 0.978 | 0.213 | 58 | 0.848 | 0.530 | 1.60 |
| 13 | 0.225 | 0.974 | 0.231 | 59 | 0.857 | 0.515 | 1.66 |
| 14 | 0.242 | 0.970 | 0.249 | 60 | 0.866 | 0.500 | 1.73 |
| 15 | 0.259 | 0.966 | 0.268 | 61 | 0.875 | 0.485 | 1.80 |
| 16 | 0.276 | 0.961 | 0.287 | 62 | 0.883 | 0.469 | 1.88 |
| 17 | 0.292 | 0.956 | 0.306 | 63 | 0.891 | 0.454 | 1.96 |
| 18 | 0.309 | 0.951 | 0.325 | 64 | 0.899 | 0.438 | 2.05 |
| 19 | 0.326 | 0.946 | 0.344 | 65 | 0.906 | 0.423 | 2.14 |
| 20 | 0.342 | 0.940 | 0.364 | 66 | 0.914 | 0.407 | 2.25 |
| 21 | 0.358 | 0.934 | 0.384 | 67 | 0.921 | 0.391 | 2.36 |
| 22 | 0.375 | 0.927 | 0.404 | 68 | 0.927 | 0.375 | 2.48 |
| 23 | 0.391 | 0.921 | 0.424 | 69 | 0.934 | 0.358 | 2.61 |
| 24 | 0.407 | 0.914 | 0.445 | 70 | 0.940 | 0.342 | 2.75 |
| 25 | 0.423 | 0.906 | 0.466 | 71 | 0.946 | 0.326 | 2.90 |
| 26 | 0.438 | 0.899 | 0.488 | 72 | 0.951 | 0.309 | 3.08 |
| 27 | 0.454 | 0.891 | 0.510 | 73 | 0.956 | 0.292 | 3.27 |
| 28 | 0.469 | 0.883 | 0.532 | 74 | 0.961 | 0.276 | 3.49 |
| 29 | 0.485 | 0.875 | 0.554 | 75 | 0.966 | 0.259 | 3.73 |
| 30 | 0.500 | 0.866 | 0.577 | 76 | 0.970 | 0.242 | 4.01 |
| 31 | 0.515 | 0.857 | 0.601 | 77 | 0.974 | 0.225 | 4.33 |
| 32 | 0.530 | 0.848 | 0.625 | 78 | 0.978 | 0.208 | 4.70 |
| 33 | 0.545 | 0.839 | 0.649 | 79 | 0.982 | 0.191 | 5.14 |
| 34 | 0.559 | 0.829 | 0.675 | 80 | 0.985 | 0.174 | 5.67 |
| 35 | 0.574 | 0.819 | 0.700 | 81 | 0.988 | 0.156 | 6.31 |
| 36 | 0.588 | 0.809 | 0.727 | 82 | 0.990 | 0.139 | 7.12 |
| 37 | 0.602 | 0.799 | 0.754 | 83 | 0.993 | 0.122 | 8.14 |
| 38 | 0.616 | 0.788 | 0.781 | 84 | 0.995 | 0.105 | 9.51 |
| 39 | 0.629 | 0.777 | 0.810 | 85 | 0.996 | 0.087 | 11.4 |
| 40 | 0.643 | 0.766 | 0.839 | 86 | 0.998 | 0.070 | 14.3 |
| 41 | 0.656 | 0.755 | 0.869 | 87 | 0.999 | 0.052 | 19.1 |
| 42 | 0.669 | 0.743 | 0.900 | 88 | 0.999 | 0.035 | 28.6 |
| 43 | 0.682 | 0.731 | 0.933 | 89 | 1.000 | 0.017 | 57.3 |
| 44 | 0.695 | 0.719 | 0.966 | 90 | 1.000 | 0.000 | Infinity |
| 45 | 0.707 | 0.707 | 1.000 | | | | |



or perhaps you prefer this more visual but approximate method of finding trig ratios using the unit radius circle.



Sine is the height on the circumference of the circle

Cosine is how far to the right you are on the circumference of the circle

Tangent is how high you are going up the far right border of the diagram.

EG: $\sin(45^\circ) = 0.7$ and a bit.

The bottom radius line here is a 30° angle, the top radius line is a 60° angle.

Mr T