**PRACTICE FINAL – TRIGONOMETRY**

\_\_\_\_ 1. Determine the angle of inclination of the line to the nearest tenth of a degree.



\_\_\_\_ 2. Determine K to the nearest tenth of a degree.



\_\_\_\_ 3. Determine ABD to the nearest tenth of a degree.



\_\_\_\_ 4. Determine the exact value of cosT.



\_\_\_\_ 5. Rhonda goes from C to B following the diagonal. Determine the angle DCB to the nearest degree.



\_\_\_\_ 6. From a point located 25ft. from a totem on the ground, the angle of elevation of the top of the totem is 50.1. What is the height of the totem to the nearest foot?

 7. Determine the area of ABC as well as its perimeter to the nearest tenth.



\_\_\_\_ 8. Determine length QR to the nearest metre.



\_\_\_\_ 9. From the top of an observation tower 25 m high, a firefighter sees a fire east of the tower, with a depression angle of 7. He sees another one north of the tower, with a depressions angle of 3. How far are the two fires from one another?

 10. A rectangle has length 19.0 cm. The angle formed by its width (shorter) and its diagonal is 56°.
Determine its width to the nearest tenth of a centimetre.

 11. A flag is attached 14.0 m above the ground. John is laying down on the ground and sees the flag with an elevation angle of 63°. At what distance, to the nearest tenth of a metre, is John to the base of the pole where the flag is attached?

 12. A cable is connected between the top of a tower and the ground. Determine the height of the tower to the nearest tenth.



**PRACTICE FINAL – EXPONENTS**

1. Evaluate without a calculator :

a) $\left(\frac{1}{4}\right)^{-3}$

b) $3^{-4}$

c) 

d) 

e) $\left(\frac{2^{8}×3^{-7}}{2^{5}×3^{-5}}\right)^{-2}$

f) $2^{7}-2^{5}+2^{0}$

g) $\frac{5^{2}-5^{0}}{5^{2}-4^{2}}$

h) $1.5^{-3}$
2. Write  as a power with a negative exponent.
3. Simplify the following expressions. Give the result with positive exponents only.

a) 

b) 

c) $\left(\frac{3x^{2}y^{-2}}{5x^{-3}y^{-1}}\right)^{-3}$

d) $8x^{2}y^{-3}×(2x^{-3}y^{-4})^{-5}×4x^{-5}y^{3}$

e) $\left(\frac{2}{5}x^{-6}y^{0}\right)^{3}$

f) $\frac{125x^{3}y^{-7}}{5^{2}x^{-1}y^{-2}}×\left(25x^{2}y^{2}\right)^{-1}$

g) $\left(\frac{3x^{2}x^{-5}y^{2}y^{-7}}{27x^{-5}y^{4}}\right)^{-2}$

h) $\left(5x^{-4}y^{2}\right)^{-5}×25x^{7}y^{-3}×10x^{-10}y^{8}$

i) $\left(3x\right)^{-5}×\left(3x\right)^{4}$

j) $\frac{27x^{-3}y^{-5}}{9^{2}x^{-11}y^{2}}×\left(3x^{-12}y^{2}\right)^{2}$