Student 3: Low Merit

NZQA Intended for teacher use only

1) Business area high rise building:
Floor 10:

$t_{10} = 120 \times 1.05^9 = 186.16 =$ outside office

186.12 x 24 = 4467.84 102 x 8 = 816 total $5283.84

Industrial area high rise building

Floor 10:

$t_{10} = 103 + 9 \times 3 = 130 \Rightarrow$ outside office

130 x 28 = 3640 65 x 16 = 1040 total $4680

2)
Building 1

$s_{15} = \frac{120(1-1.05^{15})}{-0.05} = 2589.43 \times 24 = \$62146.32$
$61246.32 + 15 \times 102 \times 6 = \$71326.32$

$s_{23} = \frac{120(1-1.05^{23})}{-0.05} = 4971.66 \times 24 = \$119319.84$
$119319.84 + 23 \times 102 \times 6 = \$133395.84$

The total rent for the building 1 is between $71326.32 and $133395.84 (1)

$s_{22} = \frac{120(1-1.05^{22})}{-0.05} = 4620.63 \times 24 = \$110895.12$
$110895.12 + 22 \times 102 \times 6 = \$124359.12$

Building 2

$s_{15} = 7.5(206 + 14 \times 3) = 1860 \times 28 = \$52080$
$52080 + 15 \times 65 \times 16 = 67680$
$s_{32} = 16(206 + 31 \times 3) = 4784 \times 28 = \$133952$
$133952 + 32 \times 65 \times 16 = \$167232$

The total weekly rent for building 2 is between $67680 and $167232 (2)

$167232 - 133395 = 33837$
$s_{25} = 12.5(206 + 24 \times 3) = 3475 \times 28 = \$97300$
$97300 + 25 \times 65 \times 16 = 123300$
$s_{27} = 13.5(206 + 26 \times 3) = 3834 \times 28 = \$107352$
$107352 + 27 \times 65 \times 16 = 135432$
$s_{26} = 13(206 + 25 \times 3) = 3653 \times 28 = \$102284$
$102284 + 26 \times 65 \times 16 = \$129324$

The developed should build 22 floors for building 1 and 25 floors for building 2.