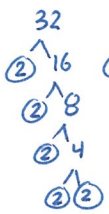
Math 20-2

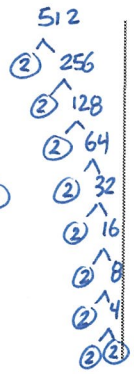
KEY

L02 – Worksheet – Adding, Subtracting, Restrictions – Math 20-2 Section

Pg 188 #4: Write in mixed radical form, then simplify.

$\sqrt{8} - \sqrt{32} + \sqrt{512}$



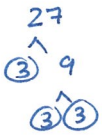


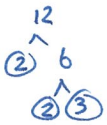
$\sqrt{2^2 \cdot 2} - \sqrt{2^2 \cdot 2^2 \cdot 2} + \sqrt{2^2 \cdot 2^2 \cdot 2^2 \cdot 2^2 \cdot 2}$

$2\sqrt{2} - 4\sqrt{2} + 16\sqrt{2}$

$14\sqrt{2}$

$-\sqrt{27} + \sqrt{75} - \sqrt{12}$





$-\sqrt{3^2 \cdot 3} + \sqrt{3 \cdot 5^2} - \sqrt{2^2 \cdot 3}$

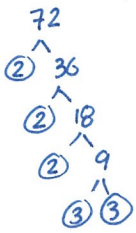
$-3\sqrt{3} + 5\sqrt{3} - 2\sqrt{3}$

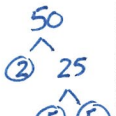
$0\sqrt{3}$

$\emptyset$

Pg 188 #5acd: Simplify.

$\sqrt{72} + \sqrt{50}$





$\sqrt{2^2 \cdot 2 \cdot 3^2} + \sqrt{2 \cdot 5^2}$

$2 \cdot 3\sqrt{2} + 5\sqrt{2}$

$6\sqrt{2} + 5\sqrt{2}$

$11\sqrt{2}$

$\sqrt{32} + 5\sqrt{2} + \sqrt{400}$

$4\sqrt{2} + 5\sqrt{2} + 20$

$9\sqrt{2} + 20$

$3\sqrt{20} + 4\sqrt{60} + \sqrt{125}$

$3 \cdot 2\sqrt{5} + 4 \cdot 2\sqrt{15} + 5\sqrt{5}$

$6\sqrt{5} + 8\sqrt{15} + 5\sqrt{5}$

$11\sqrt{5} + 8\sqrt{15}$

Pg 188 #6acd: Simplify.

$\sqrt{40} - \sqrt{360}$

$2\sqrt{10} - 6\sqrt{10}$

$-4\sqrt{10}$

$5\sqrt{32} - 7\sqrt{2} - \sqrt{484}$

$5 \cdot 4\sqrt{2} - 7\sqrt{2} - 22$

$20\sqrt{2} - 7\sqrt{2} - 22$

$13\sqrt{2} - 22$

$3\sqrt{18} - 6\sqrt{45} - 5\sqrt{108}$

$3 \cdot 3\sqrt{2} - 6 \cdot 3\sqrt{5} - 5 \cdot 6\sqrt{3}$

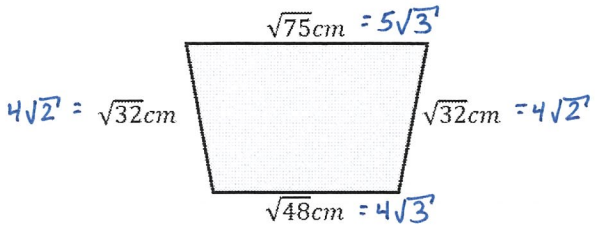
$9\sqrt{2} - 18\sqrt{5} - 30\sqrt{3}$

Cannot be further simplified.

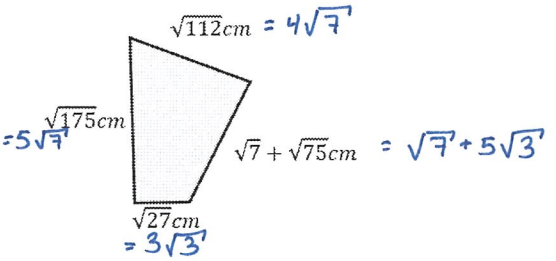
KEY

Math 20-2

Pg 188 #9: Express the perimeter of each figure in simplest form.

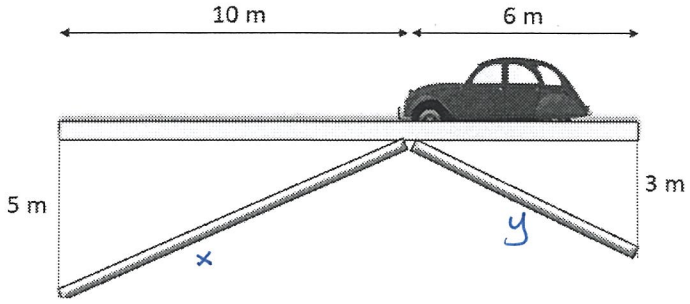


$P = \sqrt{32} + \sqrt{75} + \sqrt{32} + \sqrt{48}$
$= 4\sqrt{2} + 5\sqrt{3} + 4\sqrt{2} + 4\sqrt{3}$
$= 8\sqrt{2} + 9\sqrt{3}$



$P = \sqrt{112} + (\sqrt{7} + \sqrt{75}) + \sqrt{27} + \sqrt{175}$
$= 4\sqrt{7} + 1\sqrt{7} + 5\sqrt{3} + 3\sqrt{3} + 5\sqrt{7}$
$= 8\sqrt{3} + 10\sqrt{7}$

Pg 188 #11: A design for an overpass is shown. Determine the total length of steel needed to form the angled support section of the bridge. Express our answer as a radical in simplest form.



$a^2 + b^2 = c^2$
$5^2 + 10^2 = x^2$
$25 + 100 = x^2$
$125 = x^2$
$x = \sqrt{125}$
$x = 5\sqrt{5}$

$a^2 + b^2 = c^2$
$6^2 + 3^2 = y^2$
$36 + 9 = y^2$
$45 = y^2$
$y = \sqrt{45}$
$y = 3\sqrt{5}$

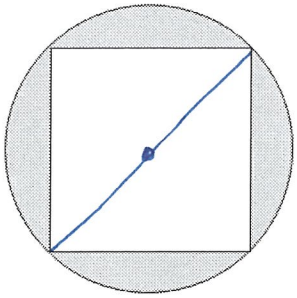
Total $= 5\sqrt{5} + 3\sqrt{5}$
$= 8\sqrt{5}$

KEY

Math 20-2

L02 – Worksheet – Adding, Subtracting, Restrictions – Math 20-1 Section

Pg 278 #15: A square is inscribed in a circle. The area of the circle is 38π m^2.



$A_{circle} = 38\pi$ m^2

a) What is the exact length of the diagonal of the square?

b) Determine the exact perimeter of the square.

(A) $Area_{CIRCLE} = \pi r^2$

$38\pi = \pi r^2$

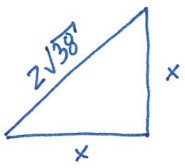
$\div\pi \quad \div\pi$

$38 = r^2$

$r = \sqrt{38}$

$d = 2\sqrt{38}$

(B)



$x^2 + x^2 = (2\sqrt{38})^2$

$2x^2 = 4 \cdot 38$

$2x^2 = 152$

$\div 2 \quad \div 2$

$x^2 = 76$

$x = \sqrt{76}$

$x = 2\sqrt{19}$

$P = 2\sqrt{19} + 2\sqrt{19} + 2\sqrt{19} + 2\sqrt{19}$

$P = 8\sqrt{19}$ m