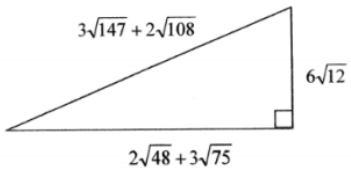
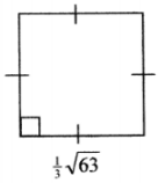
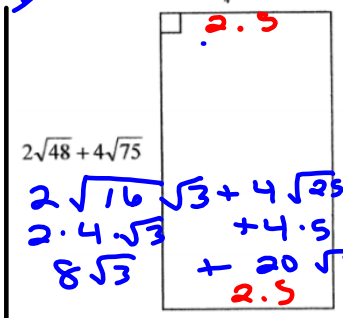
6. Find the perimeter of the following figures and circle the figure with the greatest perimeter.







$\frac{1}{4}\cdot\sqrt{100}=\frac{1}{4}\cdot\frac{10}{1}=\frac{10}{4}=\frac{5}{2}=2.5$

$2\sqrt{16}\sqrt{3}+4\sqrt{25}\sqrt{3}$

$2\cdot4\sqrt{3}+4\cdot5\cdot\sqrt{3}$

$8\sqrt{3}+20\sqrt{3}$

$P=28\sqrt{3}+28\sqrt{3}+5$

$56\sqrt{3}+5$

or

$5+56\sqrt{3}$

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Always, Sometimes or Never True

Provide numerical examples to justify your answer.

$R+Ir=Ir$ $3+\sqrt{2}$ The sum of a rational number and an irrational number is irrational Always	$8+3=11$ $\sqrt{4}+\sqrt{25}=7$ The sum of two rational numbers is rational Always
$1\cdot\pi=\pi$ $0\cdot\pi=0$ The product of a rational number and an irrational number is irrational Sometimes	$\sqrt{2}+\sqrt{2}=2\sqrt{2}$ $\sqrt{2}+(-\sqrt{2})=0$ The sum of two irrational numbers is irrational Sometimes
$3\cdot5=15$ The product of two rational numbers is irrational Never True	$\sqrt{3}(\sqrt{5})=\sqrt{15}$ $\sqrt{7}\cdot\sqrt{7}=\sqrt{49}=7$ The product of two irrational numbers is irrational Sometimes

Sep 12-3:12 PM

Review for Algebra Test: Section 1 – Expressions

1. For $6y - 3y^3 + 9y^2$

a. Write the expression in standard form

b. State the number of terms

c. What is the leading coefficient?

d. Name the polynomial based upon its number of terms.

e. What is the degree of the expression?

2. Simplify completely:

a. $\frac{6^x \cdot 6^y}{6^4} = \frac{6^{(x+y)}}{6^4}$

$6^{(x+y)-4}$

b. $(-2x^2y)(4x^5z)^2$

$-2x^2y(4^2x^{10}z^2)$

$(-2 \cdot 16)(x^2x^{10})yz^2$

$-32x^{12}yz^2$

c. $\frac{3x^8y^6}{21x^5y^7}$

$\frac{x^3}{7y}$

Sep 17-3:03 PM

3. State the degree of $9x^8yz^3$

4. Which property is demonstrated?

a. $(3x + 4) + 2y = 3x + (4 + 2y)$

b. $(3x + 4) + 2y = (4 + 3x) + 2y$

c. $12x - 9 = 3(4x - 3)$

5. Write an expression to represent the perimeter of a square whose side is $(3x - 2)$.

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6. Simplify completely:

a. $(7x - 3y + 10) + (3x - 6y - 3)$

$10x - 9y + 7$

b. $(x - 8y + 5) - 1(2x + y - 3)$

$x - 8y + 5 - 2x - y + 3$

$-x - 9y + 8$

c. $(-6x + 12) - 1(2x + 3y + 4)$

$-6x + 12 - 2x - 3y - 4$

$-4x - 3y + 8$

7. Casey and his friend, Clark, are training for a 5K run. Casey runs 3 times a week and Clark runs 4 times a week.

a. Write expressions to represent the number of times each person has ran after ***w,*** weeks.

b. Write an expression to represent the total number of times they run together after w, weeks.

c. In 6 weeks, what is the total number of runs taken by Casey and Clark?

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8. Rewrite a simplified equivalent expression for each of the following:

a. $5(3x^2 + 2x - 7)$

b. $(3x - 9)(2x + 4)$

$6x^2 + 12x - 18x - 36$

$6x^2 - 6x - 36$

c. $(4x - 7)(2x^2 + 3x - 1)$

$8x^3 + 12x^2 - 4x - 14x^2 + 21x + 7$

$8x^3 - 2x^2 + 25x + 7$

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$\sqrt{4}$ $\sqrt{9}$ $\sqrt{16}$

9. Simplify completely. Convert all answers to radical form.

a. $4\sqrt{24} + 3\sqrt{6} - 2\sqrt[3]{16}$

$4\sqrt{4}\sqrt{6} + 3\sqrt{6} - 2\sqrt[3]{8}\sqrt[3]{2}$

$4 \cdot 2 \cdot \sqrt{6} + 3\sqrt{6} - 2 \cdot 2 \cdot \sqrt[3]{2}$

$8\sqrt{6} + 3\sqrt{6} - 4\sqrt[3]{2}$

$11\sqrt{6} - 4\sqrt[3]{2}$

b. $\frac{12\sqrt{18}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{12\sqrt{36}}{2} = \frac{12 \cdot 6}{2}$

$\sqrt{4} = 2$

$= \frac{72}{2}$

$= 36$

c. $x^{\frac{1}{3}}(x^{\frac{1}{4}})$

$x^{\frac{1}{3}+\frac{1}{4}} = x^{\frac{4}{12}+\frac{3}{12}}$

$= x^{\frac{7}{12}}$

$\sqrt[12]{x^7}$ or $(\sqrt[12]{x})^7$

d. $2(12)^{\frac{1}{2}} + 4(50)^{\frac{1}{2}}$

$2 \cdot \sqrt{12} + 4 \cdot \sqrt{50}$

$2 \cdot \sqrt{4}\sqrt{3} + 4\sqrt{25}\sqrt{2}$

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

$4\sqrt{3} + 20\sqrt{2}$

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10. Select all that are equivalent to $2x^{\frac{2}{3}}$

$2 \cdot \sqrt[3]{x^2}$

$2 \cdot (\sqrt[3]{x})^2$

(a.) $2(\sqrt[3]{x})^2$

b. $(2 + \sqrt[3]{x})^2$

c. $2x^3(x^{\frac{2}{9}})$

$2 \cdot x^3 \cdot x^{\frac{2}{9}}$

$x^{\frac{3}{1}+\frac{2}{9}} = x^{\frac{29}{9}} = x^{29/9}$

(d.) $2x^{\frac{1}{6}}x^{\frac{1}{2}}$

$x^{\frac{1}{6}+\frac{1}{2}}$

$x^{\frac{1}{6}+\frac{3}{6}} = x^{\frac{4}{6}} = x^{\frac{2}{3}}$

$x^{\frac{2}{12}+\frac{6}{12}} = x^{\frac{8}{12}} = x^{\frac{2}{3}}$

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11. Provide an example for each of the following situations:

a. The product of a two irrational numbers equals an irrational number

b. The product of two irrational numbers equals a rational number

c. The sum of two irrational numbers equals an irrational number

d. The sum of two irrational numbers equals a rational number

e. The sum of rational and an irrational number equals an irrational number

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Test Yourself! Practice Tool

Direct your students to the Test Yourself! Practice Tool found at the end of the section. These 10 questions will assess your students' mastery of the topics found in this section. Upon completion, students will see their results along with a video solution for each problem. Students can take the Test Yourself! Practice Tool as many times as they wish, with new problems generated each time. Encourage your students to complete the tool until they reach a 7/10.

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