

## Common Core Math 2 Honors

## Quiz Review

Simplify. Leave your answer in simplest radical form.

1.  $\sqrt[3]{x^{16}y^4}$   $x^5y^3\sqrt[3]{xy}$

2.  $\sqrt[4]{81x^7y^2}$   $3x^4\sqrt[4]{x^3y^2}$

3.  $5x\sqrt[3]{32x^8}$   $10x^2\sqrt[3]{4x^2}$

4.  $(\sqrt[4]{2x^3})(\sqrt[4]{16x^3})$   $\sqrt[4]{32x^6} = 2x^4\sqrt[4]{2x^2}$

5.  $\sqrt[4]{x^{16}y^{18}}$   $x^4y^4\sqrt[4]{y^2}$

6.  $\sqrt[15]{x^5y^{10}}$   $\sqrt[15]{x^5y^{10}}$  (can't simplify)

7.  $\sqrt[6]{x^4y^2}$   $\sqrt[6]{x^4y^2}$  (can't simplify)

8.  $\sqrt[3]{54x^7y}$   $3x^2\sqrt[3]{2xy}$

9.  $(\sqrt[5]{25x^4})(\sqrt[5]{125x^3})$   $\sqrt[5]{3125x^7} = 5x\sqrt[5]{x^2}$

10.  $32^{2/5} = \sqrt[5]{32^2} = 4$

11.  $\left(\frac{16}{625}\right)^{1/4} = \frac{\sqrt[4]{16}}{\sqrt[4]{625}} = \frac{2}{5}$

12.  $81^{-1/4} = \frac{1}{81^{1/4}} = \frac{1}{\sqrt[4]{81}} = \frac{1}{3}$

13.  $27^{2/3} = \sqrt[3]{27^2} = 9$

14.  $216^{-1/3} = \frac{1}{216^{1/3}} = \frac{1}{\sqrt[3]{216}} = \frac{1}{6}$

15.  $\sqrt[6]{25}$   $\sqrt[6]{25}$  (can't simplify)

16.  $\sqrt[6]{125}$   $\sqrt[6]{125}$  (can't simplify)

17.  $(\sqrt[3]{x})(\sqrt{x}) = x^{1/3} \cdot x^{1/2} = x^{2/6} \cdot x^{3/6} = x^{5/6} = \sqrt[6]{x^5}$

18.  $(\sqrt[4]{x^3})(\sqrt{3x}) = x^{3/4} \cdot 3^{1/2} \cdot x^{1/2} = x^{3/4} \cdot x^{2/4} \cdot \sqrt{3} = x^{5/4} \cdot \sqrt{3} = \sqrt[4]{x^5} \cdot \sqrt{3}$

19.  $\sqrt[4]{2x^2}(\sqrt[4]{8x^3} + \sqrt[4]{x}) = \sqrt[4]{16x^5} + \sqrt[4]{2x^3} = 2x\sqrt[4]{x} + \sqrt[4]{2x^3}$

20.  $\sqrt[3]{x}(\sqrt[3]{81x^2} - \sqrt[3]{18x}) = \sqrt[3]{81x^3} - \sqrt[3]{18x^2} = 3x\sqrt[3]{3} - \sqrt[3]{18x^2}$

21.  $(\sqrt[5]{x^3} - 1)(\sqrt[5]{x^3} + 1) = \sqrt[5]{x^6} - \sqrt[5]{x^3} + \sqrt[5]{x^3} - 1 = \sqrt[5]{x^6} - 1 = x\sqrt[5]{x} - 1$

22.  $(\sqrt[3]{2x+1})(\sqrt[3]{2x-1}) = \sqrt[3]{4x^2} + \sqrt[3]{2x} - \sqrt[3]{2x} - 1 = \sqrt[3]{4x^2} - 1$

23.  $(\sqrt[4]{a^3})(\sqrt[4]{a^3}) = \sqrt[4]{a^6} = a\sqrt[4]{a^2}$

24.  $\sqrt[3]{64x^5y^{10}z^{21}} = 4xy^3z^7\sqrt[3]{x^2y}$

# Common Core Math 2 Honors

Solve

25.  $(b)^2 = (\sqrt{-4+4b})^2$

$$b^2 = -4 + 4b$$

$$b^2 - 4b + 4 = 0$$

$$(b-2)(b-2) = 0$$

$$\boxed{b = 2}$$

$$2^2 = \sqrt{-4+4(2)}$$

$$2 = \sqrt{4}$$

$$2 = 2 \checkmark$$

27.  $(\sqrt{-16+10a})^2 = (a)^2$

$$-16 + 10a = a^2$$

$$a^2 - 10a + 16 = 0$$

$$(a-2)(a-8) = 0$$

$$\boxed{a = 2, 8}$$

$$\sqrt{-16+10}$$

$$\sqrt{-16+10(8)} = 8$$

29.  $(5)^2 = (\sqrt{r-3})^2$

$$25 = r - 3$$

$$= r - 28$$

$$\boxed{28 = r}$$

31.  $(20-r)^{\frac{1}{2}} = (r)^2$

$$20 - r = r^2$$

$$0 = r^2 + r - 20$$

$$0 = (r+5)(r-4)$$

$$r = -5, \boxed{4}$$

33.  $9 + 5\sqrt[3]{2m} = 29$

$$5\sqrt[3]{2m} = 20$$

$$\sqrt[3]{2m} = 4$$

$$2m = 64$$

$$\boxed{m = 32}$$

26.  $(r)^2 = (\sqrt{8r})^2$

$$r^2 = 8r$$

$$r^2 - 8r = 0$$

$$r(r-8) = 0$$

$$\boxed{r = 0, 8}$$

28.  $(r)^2 = (\sqrt{-1-2r})^2$

$$r^2 = -1 - 2r$$

$$r^2 + 2r + 1 = 0$$

$$(r+1)(r+1) = 0$$

$$r = -1$$

$$\boxed{\text{no solution}}$$

30.  $\sqrt{2m-6} = \sqrt{3m-14}$

$$\sqrt{10} = \sqrt{24-14}$$

$$2m-6 = 3m-14$$

$$\boxed{8 = m}$$

32.  $(6b)^{\frac{1}{2}} = (8-2b)^{\frac{1}{2}}$

$$6b = 8 - 2b$$

$$8b = 8$$

$$\boxed{b = 1}$$

34.  $-x^{\frac{3}{2} \cdot \frac{2}{3}} = -27^{\frac{2}{3}}$

$$\boxed{x = 9}$$