

**Instructions:** This quiz has 37 questions. The use of calculators is forbidden. Click on the box with the right answer. To initialise the quiz you must click on "BEGIN QUIZ." When you finish the quiz you click on "END QUIZ" in order to see your score.

**Begin Quiz** Answer each of the following.

1. Collect like terms:  $5x - 3x^2 + 2 - 8x^2 - 3x - 3 =$

$24x^4 - 15x^2 - 6$        $-11x^2 + 2x - 1$        $2160x^6$        $22x^3$

2. Multiply:  $(-2x^2y^3)(6x^5y^6)$ .

$4x^7y^9$        $-12x^7y^9$        $-12x^{10}y^{18}$        $12x^7y^9$

3. Multiply:  $(-2x)(9x^2 - 17x)$ .

$18x^2 + 34x$        $-18x^3 - 34x^2$        $-18x^3 + 34x^2$        $9x^2 - 19x$

4. Divide:  $\frac{16a^8b^9}{2a^2b^3}$

$14a^4b^6$        $8a^4b^3$        $8a^6b^6$        $14a^6b^6$

5. Divide:  $\frac{-18u^4v^6 + 30u^8v^9}{-3u^2v}$

$6u^2v^5 - 10u^6v^8$        $6u^2v^5 + 10u^6v^8$        $-6u^2v^5 - 10u^6v^8$        $-6u^2v^5 + 10u^6v^8$

6. If  $y - 8 = 9$  then  $y =$

1      -1      17      -17

7. If  $6m - 2 = 34$  then  $m =$

-14      6       $\frac{16}{3}$       -6

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8. If  $10 = 5(L + 2)$  then  $L =$   
 $-4$                        $0$                        $3$                        $-3$
9. If  $a \neq 0$  and  $\frac{x}{a} = a^4$  then  $x =$   
 $a^3$                        $a^5$                        $a^4 + a$                        $a^4 - a$
10. If  $ab \neq 0$  and  $\frac{ax}{b} = \frac{b}{a}$  then  $x =$   
 $ab$                        $1$                        $\frac{b^2}{a^2}$                        $\frac{a^2}{b^2}$
11. If  $0 = 11x$  then  $x =$   
 $11$                        $0$                        $\frac{11}{0}$                        $-11$
12. If  $\frac{x}{2} - \frac{x}{3} = \frac{x}{4} + \frac{1}{2}$  then  $x =$   
 $-6$                        $-\frac{1}{6}$                        $6$                        $\frac{1}{6}$
13. If  $(2x + 1)(2x + 6) - 7(x - 2) = 4(x + 1)(x - 1) - 9x$  then  $x =$   
 $\frac{3}{2}$                        $\frac{2}{3}$                        $3$                        $-\frac{3}{2}$
14. If  $\frac{x}{b + a} = b + a$  then  $x =$   
 $a^2 + b^2$                        $a^2 + 2ab + b^2$                        $2(a + b)$                        $1$
15. If  $3x - 5 = 28$  then  $x =$   
 $\frac{23}{3}$                        $11$                        $-11$                        $20$
16. If  $a \neq 0$  and  $ax - b = 2ab - b$  then  $x =$   
 $\frac{2ab - 2b}{a}$                        $2b$                        $2a$                        $\frac{2ab + 2b}{a}$

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17. If  $a \neq 0$ , solve  $ax - 1 = b$  for  $x$ .

$$x = \frac{b-1}{a} \qquad x = ab - a \qquad x = ab + a \qquad x = \frac{b+1}{a}$$

18. The sum of three consecutive odd integers is 909. Which one is the largest number?

$$301 \qquad 307 \qquad 303 \qquad 305$$

19. Which of the following points lies on the line  $2x + 3y = -3$ ?

$$(0, 1) \qquad (-1, 1) \qquad (3, -3) \qquad (1, 1)$$

20. Which of the following lines is parallel to the  $y$ -axis?

$$x = -8 \qquad y + x = -8 \qquad y - x = -8 \qquad y = -8$$

21. Which of the points lies on the line  $x + 2y = 9$ ?

$$(7, 1) \qquad (0, 9) \qquad (5, -2) \qquad (-5, 2)$$

22. If the point  $(-3, a)$  lies on the line  $-2x + 3y = 27$ , find the value of  $a$ .

$$21 \qquad 33 \qquad 7 \qquad 11$$

23. If the point  $(a, -a)$  lies on the line  $-2x + 3y = 30$ , find the value of  $a$ .

$$6 \qquad -15 \qquad -6 \qquad 30$$

24. Factor:  $x - x^3$

$$x(x - x^2) \qquad x(x^2 - 1) \qquad x(1 - x)(1 - x) \qquad x(1 - x)(1 + x)$$

25.  $\left(\frac{2}{3}\right)^{-1} - \left(\frac{3}{4}\right)^{-1} =$

$$6 \qquad -12 \qquad -\frac{1}{12} \qquad \frac{1}{6}$$

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26. Write using positive exponents:  $\frac{x^2y^{-4}}{x^{-2}y^4} \div \frac{y^2}{x^{-2}} =$

$$\frac{1}{x^2y^{10}} \quad \frac{y^6}{x^6} \quad \frac{x^6}{y^6} \quad \frac{x^2}{y^{10}}$$

27. If  $x_1$  and  $x_2$  are the roots of  $x^2 + x - 110 = 0$  then

$$x_1 = 10, x_2 = 11$$

$$x_1 = -10, x_2 = -11$$

$$x_1 = 10, x_2 = -11$$

$$x_1 = -10, x_2 = 11$$

28.  $x(3 - x) - 2x(x - 4) =$

$$-3x^2 + 11x \quad -3x^2 - 7x \quad -3x^2 - x \quad 3x^2 + 11x$$

29.  $(9x - 4)^2 =$

$$18x - 8 \quad 81x^2 + 16 \quad 81x^2 - 72x + 16 \quad 81x^2 - 36x + 16$$

30. Find the quotient:  $\frac{x^2 - x - 6}{x + 2}$

$$-x - 3 \quad x + 3 \quad -x + 3 \quad x - 3$$

31. Factor  $2x^2 + 31x + 15$ .

$$(2x + 3)(x + 5) \quad (2x + 1)(x + 15) \quad (x + 1)(2x + 15) \quad (2x + 5)(x + 3)$$

32. Find the quotient:  $\frac{x^4 - 16}{x - 2}$

$$x^3 - 8 \quad x^3 + 8 \quad x^3 + 2x^2 + 4x + 8 \quad x^3 - 2x^2 + 4x - 8$$

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33. Factor  $6x^2 - 5x - 6$

$$(6x - 1)(x + 6)$$

$$(2x + 3)(3x - 2)$$

$$(2x - 3)(3x + 2)$$

$$(2x - 6)(3x + 1)$$

34. Factor  $x^2 - B^4$ .

$$(x - B)(x + B)$$

$$(x - B^2)(x^2 + B)$$

$$(x - B^2)(x + B^2)$$

$$(x - B^2)(x - B^2)$$

35. If

$$x + 2y = -1,$$

$$2x - 3y = -9$$

then  $x$  equals

$$3$$

$$-1$$

$$-3$$

$$1$$

36. The sum of two numbers is  $-2$ . The larger minus the smaller is 16. The larger number is

$$-9$$

$$7$$

$$-7$$

$$9$$

37. The sum of two numbers is 18. Two times the larger plus three times the smaller gives 35. The smaller number is

$$-19$$

$$1$$

$$-1$$

$$19$$

End Quiz

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