

1. Evaluate $\frac{7x}{9y}$ when $x = \frac{5}{14}$ and $y = \frac{5}{36}$.

- a)
- $\frac{18}{7}$
- b) 2 c)
- $\frac{1}{2}$
- d)
- $\frac{7}{9}$

2. Find the reciprocal of $-\frac{15}{8}$.

- a)
- $\frac{15}{8}$
- b)
- $-\frac{15}{8}$
- c)
- $-\frac{8}{15}$
- d)
- $\frac{8}{15}$

3. Find the prime factorization of 900.

- a)
- $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 5$
- b)
- $2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 \cdot 5$
-
- c)
- $2 \cdot 2 \cdot 3 \cdot 5 \cdot 5 \cdot 5$
- d)
- $2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5$

4. Solve: $7 - 12x \geq -17$.

- a)
- $\{x \mid x \geq -2\}$
- b)
- $\{x \mid x \geq 2\}$
-
- c)
- $\{x \mid x \leq -2\}$
- d)
- $\{x \mid x \leq 2\}$

5. Solve: $\frac{2}{3}x - \frac{6}{7} = \frac{3}{7}$.

- a)
- $\frac{9}{14}$
- b)
- $\frac{14}{9}$
- c)
- $\frac{27}{14}$
- d)
- $\frac{7}{9}$

6. Find decimal notation: 0.82%.

- a) 0.00082 b) 0.82 c) 82 d) 0.0082

7. What number is 160% of 37?

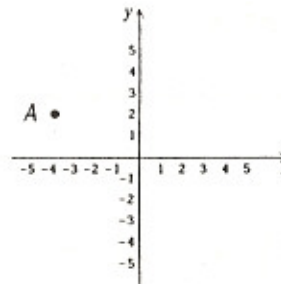
- a) 23.125 b) 59.2 c) 68.5 d) 0.0432

8. The perimeter of a rectangle is 104 m. The length is 12 m more than the width. Find the length.

- a) 32 b) 20 c) 22 d) 30

9. Find the coordinates of point A.

- a) (4, -2) b) (-2, 4)
-
- c) (2, -4) d) (-4, 2)



10. In which quadrant is the point $(-1, -1)$ located?

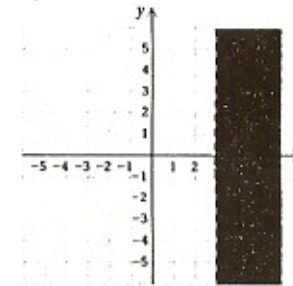
- a) III b) II c) I d) IV

11. *omit* Express $25 - \sqrt{-400}$ in terms of i .

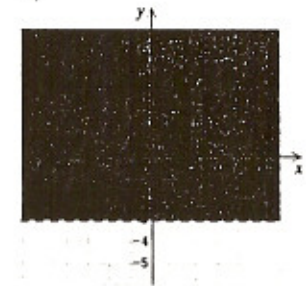
- a)
- $5i$
- b)
- $25 + 20i$
-
- c)
- $25 - 20i$
- d)
- $25 - 5i\sqrt{10}$

12. Graph: $y > -3$.

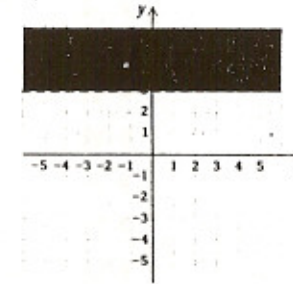
a)



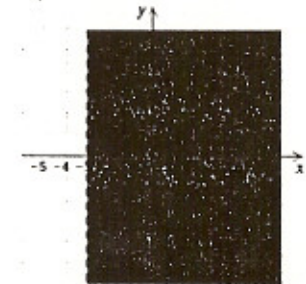
b)



c)



d)



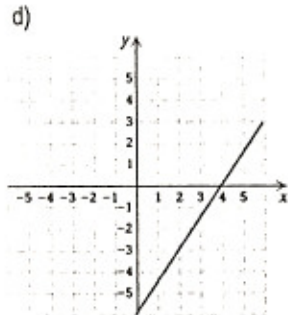
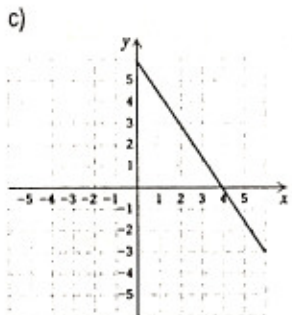
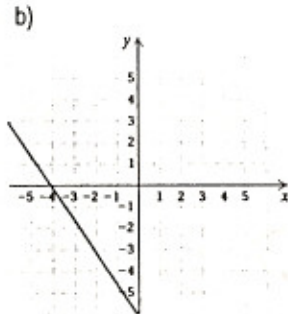
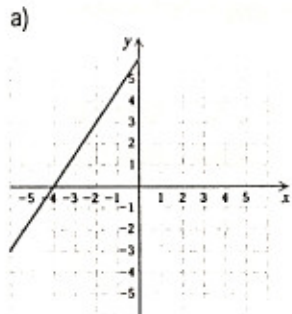
13. Simplify: $(-3x^3y^5)^4$.

- a)
- $81x^{12}y^{20}$
- b)
- $-81x^7y^9$
- c)
- $81x^7y^9$
- d)
- $-12x^{12}y^{20}$

14. Subtract: $(x^3 - 2.5x^2 + 5) - (2.7x^2 - 2x + 7)$.

- a)
- $x^3 + 5.2x^2 + 2x - 2$
- b)
- $x^3 - 0.2x^2 - 2x - 2$
-
- c)
- $x^3 - 5.2x^2 + 2x - 12$
- d)
- $x^3 - 5.2x^2 + 2x - 2$

15. Graph: $6x + 4y = -24$



16. Divide: $(36x^5 - 60x^3 + 24x^2) \div 6x^2$.

- a) $-54x^{3/2} + 18$ b) $-6x^3 + 10x - 4$
 c) $6x^3 - 10x + 4$ d) $6x^{5/2} - 10x^{3/2} + 4$

17. Remove parentheses and simplify: $5(2a - 8b) + 4b - 7$.

- a) $2a - 4b - 7$ b) $10a + 44b - 7$
 c) $10a - 36b - 7$ d) $5a - 44b - 7$

18. Multiply: $(5a - 7b)(3a + 2b)$.

- a) $15a^2 - 11ab - 14b^2$ b) $5a^2 - 11ab + 14b^2$
 c) $15a^2 - 21ab - 14b^2$ d) $15a^2 + 11ab - 14b^2$

19. Simplify: $\left(\frac{x}{y^2z}\right)^{-4}$.

- a) $\frac{y^8x^4}{z^4}$ b) $\frac{y^8z^4}{x^4}$ c) $\frac{x^4}{y^8z^4}$ d) $\frac{y^4z^4}{x^4}$

20. Find one of the factors of $3m^2 + 6m - 45$.

- a) $m + 3$ b) 5 c) $m - 5$ d) $m - 3$

21. Find one of the factors of $49x^2 + 28x + 4$.

- a) $7x - 2$ b) $2x + 7$ c) $2x - 7$ d) $7x + 2$

22. Solve: $2x^2 - x = 15$.

- a) $-5, \frac{3}{2}$ b) $-\frac{5}{2}, 3$ c) $-3, \frac{5}{2}$ d) $-\frac{3}{2}, 5$

23. The square of a number is 18 more than three times the number. Find the number.

- a) $-3, -6$ b) $3, -6$ c) $-3, 6$ d) $3, 6$

24. Divide and simplify: $\frac{36x^2 - 16}{4x^2 + 20x} \div \frac{12x - 8}{x + 5}$.

- a) $\frac{3x + 2}{4x}$ b) $\frac{6x - 4}{2x}$ c) $\frac{4x + 6}{2x}$ d) $\frac{2x - 3}{6x}$

1. b
 2. c
 3. a
 4. d
 5. c
 6. d
 7. b
 8. a
 9. d
 10. a
 11. c
 12. b
 13. a
 14. d
 15. b
 16. c
 17. c
 18. a
 19. b
 20. d
 21. d
 22. b
 23. c
 24. a
 25. a
 26. c
 27. d
 28. b
 29. b
 30. d

31. a
 32. c
 33. c
 34. d
 35. b

25. Subtract: $\frac{x-9}{x-2} - \frac{x+5}{2-x}$

- a) 2 b) 3 c) 4 d) 5

26. Simplify: $\frac{2}{x+3} - \frac{3}{x^2-9} + \frac{2}{x^2+6x+9}$

- a) $\frac{2x^2-x-33}{(x-9)(x+9)^2}$ b) $\frac{2x^2+x+33}{(x-3)(x+3)^2}$
 c) $\frac{2x^2-x-33}{(x-3)(x+3)^2}$ d) $\frac{2x^2-x-33}{(x-3)^3(x+3)^2}$

omit

27. Neville runs 5 km/h faster than Bascom. In the time that Bascom runs 5.5 km, Neville runs 8 km. What is Bascom's running speed?

- a) 21 km/h b) 6 km/h c) 16 km/h d) 11 km/h

28. Find the slope of the line containing the points (8, -2), and (-3, 5).

- a) $-\frac{11}{7}$ b) $-\frac{7}{11}$ c) $\frac{7}{11}$ d) $\frac{11}{7}$

29. Find the slope-intercept equation for the line with slope $\frac{2}{5}$ and containing the point (-5, 3).

- a) $y = \frac{2}{5}x - 5$ b) $y = \frac{2}{5}x + 5$
 c) $y = \frac{2}{5}x + 3$ d) $y = \frac{2}{5}x - 8$

omit

30. If y varies inversely as x and y = 26 when x = 3, find the equation of variation.

- a) $y = \frac{x}{78}$ b) $y = \frac{26}{3x}$ c) $y = \frac{26}{3}x$ d) $y = \frac{78}{x}$

31. Find the y-coordinate when you solve $x + y = 20$,

$$3x - y = 28.$$

- a) 8 b) 6 c) 4 d) 2

32. The sum of two numbers is 38. One number is ten less than the other. Find the larger number.

- a) 14 b) 18 c) 24 d) 28

33. Film is sold in rolls of 24 exposures for \$4.75, and 36 exposures for \$6.00. If Keesha spent \$52.50 on ten rolls of film, how many 36-exposure rolls of film did she buy?

- a) 6 b) 3 c) 4 d) 5

34. Approximate $\sqrt{82}$ using a calculator or Table 2.

- a) 10.003 b) 8.985 c) 9.550 d) 9.055

35. Simplify: $\sqrt{88a^9}$.

- a) $2a^2\sqrt{8a}$ b) $2a^4\sqrt{22}$
 c) $a^4\sqrt{88}$ d) $8a^4\sqrt{11}$